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MORPHIC HOLDING, INC. INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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Confidential Draft No. 2 Submitted on May 21, 2019. This draft registration statement has not been publicly filed with the Securities and Exchange Commission and all information herein remains confidential.

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
Under
The Securities Act of 1933

MORPHIC HOLDING, INC.
(Exact name of registrant as specified in its charter)

Delaware	**2834**	**47-3878772**
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

35 Gatehouse Drive, A2
Waltham, Massachusetts 02451
(781) 996-0955
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Praveen P. Tipirneni, M.D.
Chief Executive Officer
Morphic Holding, Inc.
35 Gatehouse Drive, A2
Waltham, Massachusetts 02451
(781) 996-0955
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Effie Toshav, Esq. **Robert A. Freedman, Esq.** **Julia Forbess, Esq.** **Fenwick & West LLP** **555 California Street** **San Francisco, California 94104** **(415) 875-2300**	**William D. DeVaul, Esq.** **Morphic Holding, Inc.** **35 Gatehouse Drive, A2** **Waltham, Massachusetts 02451** **(781) 996-0955**	**Divakar Gupta, Esq.** **Richard Segal, Esq.** **Marc Recht, Esq.** **Cooley LLP** **500 Boylston Street, 14th Floor** **Boston, Massachusetts 02116** **(617) 937-2300**

Approximate date of commencement of proposed sale to the public:
As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box. o

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration number of the earlier effective registration statement for the same offering. o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer" "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer o	Accelerated filer o	Non-accelerated filer ☒	Smaller reporting company ☒ Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. o

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	**Proposed Maximum Aggregate Offering Price(1)(2)**	**Amount of Registration Fee**
Common Stock, par value $0.0001 per share	$	$

(1) The proposed maximum aggregate offering price includes the offering price of additional shares that the underwriters have the option to purchase.

(2) Estimated solely for purposes of calculating the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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SUBJECT TO COMPLETION, DATED , 2019

PRELIMINARY PROSPECTUS

Shares

Morphic Holding, Inc.

Common Stock

We are offering shares of our common stock. This is our initial public offering and no public market currently exists for our common stock. We expect the initial public offering price to be between $ and $ per share. We intend to apply to have our common stock approved for listing on The Nasdaq Global Market under the symbol "MORF."

We are an "emerging growth company" as defined in Section 2(a) of the Securities Act of 1933, as amended, and will be subject to reduced public company reporting requirements. See "Prospectus Summary — Implications of Being an Emerging Growth Company and a Smaller Reporting Company."

Investing in our common stock involves a high degree of risk. Please read "Risk Factors" beginning on page 12 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	PER SHARE	TOTAL
Initial Public Offering Price	$	$
Underwriting Discounts and Commissions[(1)]	$	$
Proceeds to Morphic Holding, Inc., before expenses	$	$

(1) See "Underwriting" on page 170 for additional information regarding underwriting compensation.

Delivery of the shares of common stock is expected to be made on or about , 2019. We have granted the underwriters an option for a period of 30 days from the date of this prospectus to purchase an additional shares of our common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $ million, and the total proceeds to us, before expenses, will be $ million.

Joint Book-Running Managers

Jefferies **Cowen** **BMO Capital Markets** **Wells Fargo Securities**

Prospectus dated , 2019

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We have not, and the underwriters have not, authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses we have prepared. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus or in any applicable free writing prospectus is current only as of its date, regardless of its time of delivery or any sale of shares of our common stock.

Through and including , 2019 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This delivery is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

For investors outside of the United States: We have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside of the United States.

TRADEMARKS

"Morphic," "Morphic Therapeutic," the Morphic logo, and all product names are our common law trademarks. All other service marks, trademarks and trade names appearing in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and tradenames referred to in this prospectus appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or the right of the applicable licensor to these trademarks and tradenames.

MARKET AND INDUSTRY DATA

This prospectus contains estimates and other statistical data made by independent parties and by us relating to our industry and the markets in which we operate, including our general expectations and market position, market opportunity, the incidence of certain medical conditions and other industry data. These data, to the extent they contain estimates or projections, involve a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates or projections. Industry publications and other reports we have obtained from independent parties generally state that the data contained in these publications or other reports have been obtained in good faith or from sources considered to be reliable, but they do not guarantee the accuracy or completeness of such data. The industry in which we operate is subject to risks and uncertainties due to a variety of factors, including those described in the section entitled "Risk Factors." These and other factors could cause results to differ materially from those expressed in these publications and reports.

PROSPECTUS SUMMARY

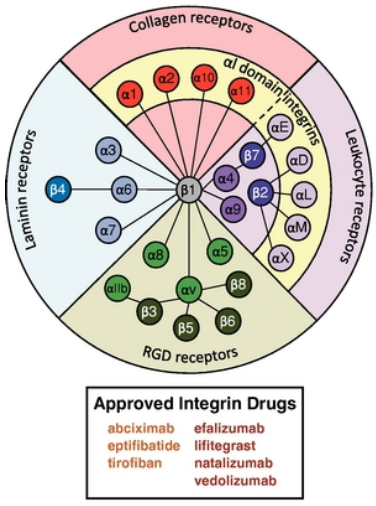
This summary highlights selected information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should carefully read this entire prospectus, including our financial statements and the related notes thereto and the information set forth under the sections entitled "Risk Factors," "Selected Consolidated Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," in each case included in this prospectus. Some of the statements in this prospectus constitute forward-looking statements that involve risks and uncertainties. See the section entitled "Special Note Regarding Forward-Looking Statements." Unless the context otherwise requires, we use the terms "Morphic," "company," "we," "us" and "our" in this prospectus to refer to Morphic Holding, Inc.

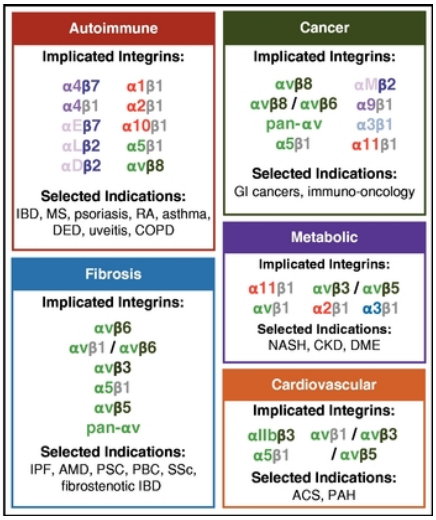
Overview

We are a biopharmaceutical company applying our proprietary insights into integrins to discover and develop a pipeline of potentially first-in-class oral small-molecule integrin therapeutics. Integrins are a target class with multiple approved injectable blockbuster drugs for the treatment of serious chronic diseases, including autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer. To date, no oral small-molecule integrin therapies have been approved by the FDA. Despite significant unsuccessful efforts, we believe tremendous untapped potential remains for us to develop oral integrin therapies. We created the Morphic integrin technology platform, or MInT Platform, by leveraging our unique understanding of integrin structure and biology to develop novel product candidates designed to achieve the potency, high selectivity and pharmaceutical properties required for oral administration. We are advancing our preclinical pipeline, including our lead wholly-owned program for a_4b_7 specific integrin inhibitors affecting inflammation into clinical development for the treatment of inflammatory bowel disease, or IBD. We are also developing our most advanced product candidate, MORF-720, a selective oral a_vb_6 specific integrin inhibitor into clinical development for the treatment of idiopathic pulmonary fibrosis, or IPF, in collaboration with AbbVie Inc., or AbbVie. We intend to advance our a_4b_7 program and MORF-720 toward Investigational New Drug applications, or INDs, by the middle of 2020 and as early as the end of 2019, respectively. Beyond our current targets, we are using our MInT Platform to create a broad pipeline of programs across a variety of therapeutic areas, all of which aim to harness the potential of inhibition or activation.

Our Focus — Integrin Receptors

Integrins are the only receptors in the human body that use both intracellular and extracellular ligands to transmit signals both from inside of the cell to the outside of the cell and from the outside of the cell to the inside of the cell. This bi-directional signaling ability allows integrins to affect virtually every aspect of cell and organ homeostasis. Consequently, the dysregulation of integrin signaling is associated with many human diseases including autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer.





Integrins exist as paired combinations of 18 a and eight b subunits resulting in 24 known heterodimers. These pairings give integrins their unique abilities to recognize their ligands and modulate cellular function in specific ways. Integrins are subdivided into those on leukocytes, and those that recognize RGD peptide, collagen and laminin ligands. They regulate numerous aspects of cell biology and physiology including: leukocyte trafficking, activation of platelets and leukocytes, activation of growth factors such as TGF-b, cell adhesion to the basement membrane and extracellular matrix, and retention or adhesion strengthening of cells within tissues. This diverse set of functions makes them actionable targets across a broad range of human diseases based on preclinical modeling or clinical establishment.

We initially focused on developing product candidates in established target classes, for which the functional role of the target in the disease phenotype has been documented in patients in areas of high unmet medical needs including:

- a_4b_7 and a_4b_1, which are established targets for autoimmune diseases; their mechanism of action and the benefits and risks of their inhibition are well understood; and
- certain a_v integrins that have a preclinically well-characterized mechanism of action through the activation of TGF-b, a clinically important anti-inflammatory cytokine dysregulated in many human pathologies.

To date, we have not tested any of our product candidates in any clinical studies, and we currently only have pre-clinical data regarding oral bioavailability of our product candidates.

Our Platform and Approach

We believe that our discovery platform enables us to be the only company working across the entire 24-member integrin family. Our MInT Platform consists of three unique capabilities:

- Proprietary ability to determine integrin structures;
- Tunable product candidate design engine; and
- Biology and disease translation capability.

Our novel MInT Platform is rooted in our structural biology capability, based on deep insights into control of complex integrin conformational states. Dr. Timothy A. Springer of Harvard Medical School, our co-founder and a world-renowned immunologist and biophysicist who discovered integrins, characterized an initial set of small molecules to lock specific integrin conformations and we have used and advanced this knowledge to optimize the pharmacology of our oral integrins. Today, pursuant to an exclusive license from the Children's Medical Center Corporation, our MInT Platform is powered by these initial insights, together with our proprietary knowledge of integrin conformations, affinity regulation and dynamics. We design our compounds to recognize integrin conformational states that are physiologic and dysregulated in disease. Binding of our compounds to integrins promotes the integrin to adopt a structure that is characteristic of healthy tissue and stops disease-specific integrin signaling. We believe past attempts to develop small molecules targeting integrins have in part failed due to a lack of sufficient understanding of these conformational changes and their impact on disease. We believe our MInT Platform has positioned us to apply our deep understanding of the biologic underpinnings of diseases linked to integrin dysfunction to develop a pipeline of novel integrin therapeutics.

Product Candidate Pipeline

The following table summarizes key information about our current product candidates:

	Name	Integrin Target	Modality	Indication(s)	Stage of Development	Product Rights
Leukocyte	MR β7 #1 MR β7 #2	$\alpha_4\beta_7$	Oral Inhibitor	• Ulcerative Colitis • Crohn's Disease • Eosinophilic Esophagitis	• IND-enabling studies • Intended IND application submission by the middle of 2020	Morphic
RGD	MORF-720	$\alpha_v\beta_6$	Oral Inhibitor	• Idiopathic Pulmonary Fibrosis	• IND-enabling studies • Intended IND application submission as early as the end of 2019	AbbVie
	MR β6 #2	$\alpha_v\beta_6$	Oral Inhibitor	• Primary Sclerosing Cholangitis • Nonalcoholic Steatohepatitis	• Non-Clinical	Morphic AbbVie

(1) We have neither applied for, nor received, FDA approval for any of our product candidates to date.

Research Pipeline

In addition to our product candidates, we are also advancing discovery stage assets in the following areas:

RGD	$\alpha_v\beta_1$	Oral Inhibitor	Fibrosis	Discovery	Morphic
	TGF-β Activation	Oral Inhibitor	Gastrointestinal cancers	Discovery	Morphic
	TGF-β Activation	Oral Inhibitor	Fibrosis	Discovery	AbbVie
Other	Undisclosed targets, including αI Domain Integrins	Oral Modulator	Undisclosed	Discovery	Janssen

Our lead wholly-owned program focuses on the advancement of an oral therapy targeting the a_4b_7 integrin receptor for the treatment of IBD, or more specifically, ulcerative colitis and Crohn's disease. We believe that there is a significant unmet need for an oral therapy with the safety and efficacy of a biologic such as vedolizumab. We have identified potent and selective oral small molecules targeting a_4b_7 and expect to submit an IND in the middle of 2020 for our a_4b_7 program. We also anticipate reporting clinical proof of concept data in 2021.

§ We are progressing our most advanced product candidate, MORF-720, a selective oral first-in-class a_vb_6 specific integrin inhibitor, into clinical development for the treatment of IPF, a disease with high unmet medical need. As part of our collaboration with AbbVie, they have an option to license this

program at IND for future development and commercialization, and if this option is exercised, we are entitled to a license fee of $20.0 million, as well as potential milestone payments and royalties. We expect an IND application to be submitted for our $\alpha_v\beta_6$ product candidate for the treatment of IPF as early as the end of 2019. We also anticipate positron emission tomography (PET) imaging data in 2020, as well as potentially filing an IND for a liver indication in 2021.

In addition to our product candidates, we are also in the discovery stage for an $\alpha_v\beta_1$ integrin for the treatment of fibrosis, two TGF-β Activations for gastrointestinal cancers and fibrosis, respectively, as well as other undisclosed targets, including αI domain integrins.

Our Strategy

Our goal is to utilize our MInT Platform to discover and develop potentially first-in-class oral small-molecule integrin therapeutics. We believe our platform has the potential to transform the treatment paradigm for patients suffering from a broad range of serious chronic diseases. The key tenets of our business strategy to achieve this goal include:

- establishing orally available integrin modulators as a new treatment for serious chronic diseases, including autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer;
- leveraging our proprietary MInT Platform and knowledge base to grow our pipeline of novel integrin therapeutics;
- continuing to drive innovation across our MInT Platform; and
- independently commercializing our products, if approved, in indications and geographies where we believe we can realize maximum value.

We have assembled an experienced management team, board of directors and scientific advisory board with specialized expertise in integrin therapies. They collectively bring extensive experience in discovering, developing and commercializing therapeutics, having worked at companies such as Biogen Inc., Cubist Pharmaceuticals, Inc., Gilead Sciences, Inc., Merck & Co. and Pfizer Inc.

Since our inception, we have raised $248 million through equity financings and collaborations. Our investors include AbbVie Ventures, EcoR1 Capital Fund, Invus, Novo Holdings A/S, Omega Funds, Pfizer Ventures, Polaris Partners, Schrödinger, Inc., ShangPharma Investment Group Limited, S.R. One, Limited, Dr. Timothy A. Springer, and our collaborators are AbbVie, Janssen and Schrödinger.

Risks Affecting Our Business

Our business is subject to a number of risks, including risks that may prevent us from achieving our business objectives or may adversely affect our business, financial condition, results of operations, cash flows and prospects that you should consider before making a decision to invest in our common stock. These risks are discussed more fully in the section titled "Risk Factors" beginning on page 12 of this prospectus, and include the following:

- We are a preclinical stage biopharmaceutical company with a limited operating history and no products in clinical development or approved for commercial sale. We have a history of significant losses and expect to continue to incur significant losses for the foreseeable future.
- We have never generated revenue from product sales and may never be profitable.
- Even if we complete this offering, we will need substantial additional funds to advance development of our product candidates, which may not be available on acceptable terms, or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development programs, commercialization efforts or other operations.

- Our product candidates are in early stages of development and may fail in development or suffer delays that materially and adversely affect their commercial viability. If we or our collaborators are unable to complete development of, or commercialize our product candidates or experience significant delays in doing so, our business will be materially harmed.
- Our business is heavily dependent on the success of our a_4b_7 program and our most advanced product candidate, MORF-720. Existing and future preclinical studies and clinical trials of these product candidates may not be successful, and if we are unable to commercialize these product candidates or experience significant delays in doing so, our business will be materially harmed.
- Preclinical and clinical development involve a lengthy and expensive process, with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results. We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our current product candidates or any future product candidates.
- We have entered into collaborations with AbbVie and Janssen and may, in the future, seek to enter into collaborations with other third parties for the discovery, development and commercialization of our product candidates. If our collaborators cease development efforts under our collaboration agreements, or if any of those agreements are terminated, these collaborations may fail to lead to commercial products and we may never receive milestone payments or future royalties under these agreements.
- We expect to rely on third parties to conduct certain of our preclinical studies or clinical trials. If those third parties do not perform as contractually required, fail to satisfy legal or regulatory requirements, miss expected deadlines or terminate the relationship, our development program could be delayed with potentially material and adverse effects on our business, financial condition, results of operations and prospects.
- We face competition from entities that have developed or may develop product candidates for autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer, including companies developing novel treatments and technology platforms. If these companies develop technologies or product candidates more rapidly than we do or their technologies are more effective, our ability to develop and successfully commercialize product candidates may be adversely affected.
- Any inability to attract and retain qualified key management and technical personnel would impair our ability to implement our business plan.
- If we are not able to obtain, maintain, and enforce patent protection for our technologies or product candidates, development and commercialization of our product candidates may be adversely affected.

Implications of Being an Emerging Growth Company and a Smaller Reporting Company

As a company with less than $1.07 billion in revenue during our last fiscal year, we qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or JOBS Act. An emerging growth company may take advantage of reduced reporting requirements that are otherwise applicable to public companies. These provisions include, but are not limited to:

- being permitted to present only two years of audited financial statements and only two years of related Management's Discussion and Analysis of Financial Condition and Results of Operations in this prospectus;
- not being required to comply with the auditor attestation requirements on the effectiveness of our internal controls over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements (auditor discussion and analysis);
- reduced disclosure obligations regarding executive compensation arrangements; and

- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We may use these provisions until the last day of our fiscal year in which the fifth anniversary of the completion of this offering occurs. However, if certain events occur prior to the end of such five-year period, including if we become a "large accelerated filer," our annual gross revenues exceed $1.07 billion or we issue more than $1.0 billion of non-convertible debt in any three-year period, we will cease to be an emerging growth company prior to the end of such five-year period.

We have elected to take advantage of certain of the reduced disclosure obligations in the registration statement of which this prospectus is a part and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

The JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards, until those standards apply to private companies. We have elected to take advantage of the benefits of this extended transition period and, therefore, we will not be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. Our financial statements may therefore not be comparable to those of companies that comply with such new or revised accounting standards. Until the date that we are no longer an emerging growth company or affirmatively and irrevocably opt out of the exemption provided by Section 7(a)(2)(B) of the Securities Act of 1933, as amended, upon issuance of a new or revised accounting standard that applies to our financial statements and that has a different effective date for public and private companies, we will disclose the date on which we will adopt the recently issued accounting standard.

We are also a "smaller reporting company," meaning that the market value of our stock held by non-affiliates plus the proposed aggregate amount of gross proceeds to us as a result of this offering is less than $700.0 million and our annual revenue is less than $100.0 million during the most recently completed fiscal year. We may continue to be a smaller reporting company after this offering if either (i) the market value of our stock held by non-affiliates is less than $250.0 million or (ii) our annual revenue is less than $100.0 million during the most recently completed fiscal year and the market value of our stock held by non-affiliates is less than $700.0 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Corporate Information

We were formed under the laws of the State of Delaware in August 2014 under the name Integrin Rock, LLC. We subsequently changed our name to Morphic Rock Holding, LLC in October 2014 and then to Morphic Holding, LLC in June 2016, and we subsequently converted to a corporation under the name Morphic Holding, Inc. in December 2018. Our principal executive offices are located at 35 Gatehouse Drive, A2, Waltham, MA 02451, and our telephone number is (781) 996-0955. Our website address is www.morphictx.com. The information contained on, or that can be accessed through, our website is not part of, and is not incorporated by reference into, this prospectus. Investors should not rely on any such information in deciding whether to purchase our common stock.

THE OFFERING

Common stock offered	shares
Option to purchase additional shares	We have granted the underwriters an option, exercisable for 30 days after the date of this prospectus, to purchase up to an additional shares from us.
Common stock to be outstanding immediately after this offering	shares (or shares if the underwriters exercise their option to purchase additional shares in full).
Use of proceeds	We estimate that the net proceeds from this offering will be approximately $ million (or approximately $ million if the underwriters exercise their option to purchase additional shares in full), based upon the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses. We intend to use the net proceeds from this offering to fund the further development of our oral small-molecule integrin therapeutics, the further development of our platform to broaden our pipeline of product candidates and for working capital and general corporate purposes. See the section entitled "Use of Proceeds."
Risk factors	You should read the section entitled "Risk Factors" in this prospectus for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.
Proposed Nasdaq Global Market symbol	"MORF"

The number of shares of our common stock to be outstanding after this offering is based on 137,593,380 shares of our common stock outstanding as of March 31, 2019, and gives effect to the automatic conversion of all 122,513,962 shares of our outstanding convertible preferred stock as of March 31, 2019 into an aggregate of 122,513,962 shares of common stock immediately prior to the completion of this offering, and excludes:

- 10,417,696 shares of common stock issuable upon the exercise of options outstanding as of March 31, 2019 under our 2018 Stock Incentive Plan, with a weighted-average exercise price of $0.74 per share;
- 1,522,000 shares of common stock issuable upon the exercise of options outstanding that were granted after March 31, 2019 under our 2018 Stock Incentive Plan, with an exercise price of $1.33 per share;
- 39,800 shares of common stock issuable upon the exercise of a warrant to purchase 39,800 shares of our Series Seed convertible preferred stock outstanding as of March 31, 2019, with an exercise price of $0.75286 per share, that will automatically convert to a warrant to purchase 39,800 shares of our common stock upon the completion of this offering; and
- shares of common stock reserved for future issuance under our stock-based compensation plans, consisting of (i) 2,667,369 shares of common stock reserved for future issuance under our 2018 Stock Incentive Plan as of March 31, 2019, (ii) shares of common stock reserved for future issuance under our 2019 Equity Incentive Plan, which will become effective on the date

immediately prior to the date of the effectiveness of the registration statement of which this prospectus forms a part and (iii) shares of common stock reserved for future issuance under our 2019 Employee Stock Purchase Plan, which will become effective on the date of the effectiveness of the registration statement of which this prospectus forms a part. Upon completion of this offering, any remaining shares available for issuance under our 2018 Stock Incentive Plan will be added to the shares reserved under our 2019 Equity Incentive Plan and we will cease granting awards under our 2018 Stock Incentive Plan. Our 2019 Equity Incentive Plan and 2019 Employee Stock Purchase Plan also provide for automatic annual increases in the number of shares reserved under the plans each year, as more fully described in "Executive Compensation — Equity Compensation Plans and Other Benefit Plans."

Except as otherwise indicated, all information in this prospectus assumes or gives effect to:

- the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 122,513,962 shares of common stock immediately prior to the completion of this offering;
- the automatic conversion of an outstanding warrant exercisable for 39,800 shares of our Series Seed convertible preferred stock as of March 31, 2019 into a warrant exercisable for 39,800 shares of common stock, which will occur automatically in connection with the completion of this offering;
- a -for- reverse stock split, which will become effective prior to the completion of this offering;
- the effectiveness of our restated certificate of incorporation and restated bylaws in connection with the completion of this offering;
- no exercise of outstanding options or warrants after March 31, 2019; and
- no exercise of the underwriters' option to purchase additional shares of our common stock.

SUMMARY CONSOLIDATED FINANCIAL DATA

The following tables set forth our summary consolidated statements of operations and consolidated balance sheet data. The summary consolidated statements of operations data presented below for the years ended December 31, 2017 and 2018 are derived from our audited consolidated financial statements included elsewhere in this prospectus. We have derived the summary consolidated statements of operations data for the three months ended March 31, 2018 and 2019 and the summary consolidated balance sheet data as of March 31, 2019 from our unaudited consolidated financial statements included elsewhere in this prospectus. The following summary consolidated financial data should be read in conjunction with "Selected Consolidated Financial Data," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in any future period and our results for the three months ended March 31, 2019 are not necessarily indicative of the results that may be expected for the year ended December 31, 2019. The summary consolidated financial data in this section are not intended to replace the consolidated financial statements and are qualified in their entirety by the consolidated financial statements and related notes included elsewhere in this prospectus.

	Year Ended December 31,		Three Months Ended March 31,	
	2017	2018	2018	2019
	(in thousands, except share and per share data)			
Consolidated Statements of Operations				
Collaboration revenue — related party	$ —	$ 3,358	$ —	$ 5,570
Collaboration revenue — other	—	—	—	498
Total collaboration revenue	—	—	—	6,068
Operating expenses:				
Research and development	14,103	22,631	4,284	10,370
General and administrative	2,826	5,355	935	1,832
Total operating expenses	16,929	27,986	5,219	12,202
Loss from operations	(16,929)	(24,628)	(5,219)	(6,134)
Other income (expense):				
Interest income, net	14	871	55	1,063
Other expense, net	(5)	(74)	(16)	—
Total other income	9	797	39	1,063
Loss before provision for income taxes	$ (16,920)	$ (23,831)	$ (5,180)	$ (5,071)
Provision for income taxes	—	—	—	$ (129)
Net loss	$ (16,920)	$ (23,831)	$ (5,180)	$ (5,200)
Net loss per unit, basic and diluted	$ (2.87)		$ (0.88)	
Net loss per share, basic and diluted		$ (3.82)		$ (0.47)
Weighted average common units outstanding, basic and diluted	5,896,584		5,896,584	
Weighted average common shares outstanding, basic and diluted		6,237,889		10,962,388
Pro-forma net loss per share, basic and diluted (unaudited)[1]		$ (0.31)		$ (0.04)
Pro-forma weighted average common shares outstanding, basic and diluted (unaudited)[1]		77,596,055		133,476,350

(1) Basic and diluted pro forma net loss per share give effect to the automatic conversion of all shares of convertible preferred stock into shares of common stock upon completion of this offering, assuming such conversion occurred on the later of January 1, 2018 or the original issuance dates of the convertible preferred units or convertible preferred stock.

	As of March 31, 2019		
	Actual	Pro Forma[1]	Pro Forma As Adjusted[2]
		(in thousands)	
Consolidated Balance Sheet Data:			
Cash, cash equivalents and marketable securities	$ 186,070	$ 186,070	$
Working capital[3]	147,035	147,035	
Total assets	190,291	190,291	
Convertible preferred stock	139,809	—	
Accumulated deficit	(59,385)	(59,385)	
Total stockholders' (deficit) equity	(57,228)	82,606	

(1) Pro forma amounts give effect to the automatic conversion of all of our outstanding shares of convertible preferred stock into an aggregate of 122,513,962 shares of common stock upon completion of this offering and the automatic conversion of the outstanding warrant to purchase 39,800 shares of convertible preferred stock into a warrant to purchase 39,800 shares of common stock, and the resulting reclassification of the warrant liability to additional paid-in capital.

(2) Pro forma as adjusted amounts reflect pro forma adjustments described in footnote (1) as well as the sale of shares of our common stock in this offering at the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. A $1.00 increase (decrease) in the assumed intial public offering price of $ per share, the midpoint of the price range set forth on the cover of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' (deficit) equity by $ million, assuming that the number of shares offered by us, as set forth on the cover of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase (decrease) of 1.0 million in the number of shares offered by us in this offering would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' (deficit) equity by $ million, assuming the assumed initial offering price remains the same and after deducting estimated underwriting discounts commissions and estimated offering expenses payable by us.

(3) We define working capital as current assets less current liabilities. See our consolidated financial statements and related notes appearing at the end of this prospectus for further details regarding our current assets and current liabilities.

REORGANIZATION

Reorganization and Convertible Preferred Stock

On December 5, 2018, we completed a series of transactions, or the Reorganization, pursuant to which Morphic Holding, LLC was converted in a tax-free exchange into Morphic Holding, Inc. and three subsidiaries, namely Lazuli, Inc., Tourmaline, Inc. and Phyllite, Inc. were merged with and into Morphic Therapeutic, Inc. In connection with the Reorganization:

- Holders of Morphic Holding, LLC Series B convertible preferred units received one share of Morphic Holding, Inc. Series B convertible preferred stock for each outstanding Series B convertible preferred unit held immediately prior to the Reorganization, with an aggregate of 61,538,454 shares of Morphic Holding, Inc. Series B convertible preferred stock issued in the Reorganization;
- Holders of Morphic Holding, LLC Series A convertible preferred units received one share of Morphic Holding, Inc. Series A convertible preferred stock for each outstanding Series A convertible preferred unit held immediately prior to the Reorganization, with an aggregate of 49,047,619 shares of Morphic Holding, Inc. Series A convertible preferred stock issued in the Reorganization;
- Holders of Morphic Holding, LLC Series Seed convertible preferred units received one share of Morphic Holding, Inc. Series Seed convertible preferred stock for each outstanding Series Seed convertible preferred unit held immediately prior to the Reorganization, with an aggregate of 11,927,889 shares of Morphic Holding, Inc. Series Seed convertible preferred stock issued in the Reorganization;
- Holders of Morphic Holding, LLC common units received one share of Morphic Holding, Inc. common stock for each outstanding common unit held immediately prior to the Reorganization, with an aggregate of 5,896,584 shares of common stock issued in the Reorganization;
- Holders of Morphic Holding, LLC vested and unvested incentive units, irrespective of any threshold amount or voting rights on any such outstanding incentive units, exchanged one incentive unit for one share of common stock or restricted common stock of Morphic Holding, Inc., respectively. Threshold amount on all vested and unvested incentive units was decreased to $0. The restricted common stock was issued with the same vesting terms as the unvested incentive units held immediately prior to the Reorganization. A total of 9,182,834 shares of common stock and restricted common stock were issued to the prior holders of incentive units; and
- The outstanding warrant to purchase 39,800 Series Seed convertible preferred units of Morphic Holding, LLC at an exercise price of $0.75286 per unit was converted to a warrant to purchase 39,800 shares of Series Seed convertible preferred stock of Morphic Holding, Inc. at the same exercise price per share.

Our Series B convertible preferred stock, Series A convertible preferred stock, Series Seed convertible preferred stock are designated as convertible preferred stock under our current amended and restated certificate of incorporation. All outstanding shares of convertible preferred stock are convertible into shares of common stock at the then-effective conversion ratios. The purpose of the Reorganization was to reorganize our corporate structure so that Morphic Holding, Inc. would continue as a corporation and so that our existing investors would own capital stock in a corporation rather than equity interests in a limited liability company. For the convenience of the reader, except as the context otherwise requires, all information included in this prospectus is presented giving effect to the Reorganization.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before making your decision to invest in shares of our common stock, you should carefully consider the risks described below, together with the other information contained in this prospectus, including our financial statements and the related notes appearing at the end of this prospectus. We cannot assure you that any of the events discussed below will not occur. These events could have a material and adverse impact on our business, financial condition, results of operations and prospects. If that were to happen, the trading price of our common stock could decline, and you could lose all or part of your investment.

Risks Related to Our Financial Position and Need for Capital

We are a preclinical stage biopharmaceutical company with a limited operating history and no products in clinical development or approved for commercial sale. We have a history of significant losses and expect to continue to incur significant losses for the foreseeable future.

We are a preclinical stage biopharmaceutical company with a limited operating history on which to base your investment decision. Biopharmaceutical product development is a highly speculative undertaking because it entails substantial upfront capital expenditures and significant risk that any potential product candidate will fail to demonstrate adequate effect or an acceptable safety profile, gain regulatory approval or become commercially viable.

We have identified lead product candidates for our a_4b_7 and a_vb_6 programs, which are still in the preclinical testing stage. We have no products in clinical development or approved for commercial sale and have not generated any revenue from commercial product sales, and we will continue to incur significant research and development and other expenses related to our clinical development and ongoing operations. For the years ended December 31, 2017 and December 31, 2018, our net losses were approximately $16.9 million and $23.8 million, respectively and for the three months ended March 31, 2019, we reported a net loss of $5.2 million. As of March 31, 2019, we had an accumulated deficit of approximately $59.4 million. Substantially all of our losses have resulted from expenses incurred in connection with our research and development programs and from general and administrative costs associated with our operations. We expect to incur significant losses for the foreseeable future, and we expect these losses to increase as we continue our research and development of our product candidates.

We anticipate that our expenses will increase substantially if, and as, we:

- conduct clinical trials for our lead wholly-owned a_4b_7 program and for our most advanced product candidate from our a_vb_6 program, MORF-720, and any future product candidates;
- discover and develop new product candidates, and conduct research and development activities, preclinical studies and clinical trials;
- manufacture, or have manufactured, pre-clinical, clinical and commercial supplies of our product candidates;
- seek regulatory approvals for our product candidates or any future product candidates;
- commercialize our current product candidates or any future product candidates, if approved;
- attempt to transition from a company with a research focus to a company capable of supporting commercial activities, including establishing sales, marketing and distribution infrastructure;
- hire additional clinical, scientific and management personnel;
- add operational, financial and management information systems and personnel;
- identify additional compounds or product candidates and acquire rights from third parties to those compounds or product candidates through licenses; and

- incur additional costs associated with operating as a public company following the completion of this offering.

Even if we succeed in commercializing one or more product candidates, we may continue to incur substantial research and development and other expenditures to develop and market additional product candidates. We may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. The size of our future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate revenue. Our prior losses and expected future losses have had and will continue to have an adverse effect on our stockholders' equity and working capital.

We have never generated revenue from product sales and may never be profitable.

Our ability to become and remain profitable depends on our ability to generate revenue. We do not expect to generate significant revenue, if any, unless and until we, either alone or with a collaborator, are able to obtain regulatory approval for, and successfully commercialize, our lead product candidates, or any other product candidates we may develop. Successful commercialization will require achievement of many key milestones, including demonstrating safety and efficacy in clinical trials, obtaining regulatory, including marketing, approval for these product candidates, manufacturing, marketing and selling those products for which we, or any of our current or future collaborators, may obtain regulatory approval, satisfying any post-marketing requirements and obtaining reimbursement for our products from private insurance or government payors. Because of the uncertainties and risks associated with these activities, we are unable to accurately and precisely predict the timing and amount of revenues, the extent of any further losses or if or when we might achieve profitability. We and any current or future collaborators may never succeed in these activities and, even if we do, or any collaborators do, we may never generate revenues that are large enough for us to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Additionally, our expenses could increase if we are required by the U.S. Food and Drug Administration, or the FDA, or any comparable foreign regulatory authority to perform clinical trials in addition to those currently expected, or if there are any delays in completing our clinical trials or the development of any of our product candidates.

Our failure to become and remain profitable may depress the market price of our common stock and could impair our ability to raise capital, expand our business or continue our operations. If we continue to suffer losses as we have in the past, investors may not receive any return on their investment and may lose their entire investment.

Even if we complete this offering, we will need substantial additional funds to advance development of our product candidates, which may not be available on acceptable terms, or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development programs, commercialization efforts or other operations.

The development of biopharmaceutical product candidates is capital-intensive. If our product candidates enter and advance through preclinical studies and clinical trials, we will need substantial additional funds to expand or create our development, regulatory, manufacturing, marketing and sales capabilities. We have used substantial funds to develop our technology and product candidates and will require significant funds to conduct further research and development and preclinical testing and clinical trials of our product candidates, to seek regulatory approvals for our product candidates and to manufacture and market products, if any, which are approved for commercial sale. In addition, upon the completion of this offering, we expect to incur additional costs associated with operating as a public company.

Since our inception, we have invested a significant portion of our efforts and financial resources in research and development activities for our product candidates from our lead programs, a_4b_7 and a_vb_6. Preclinical studies and clinical trials for our product candidates will require substantial funds to complete. As of

March 31, 2019, we had $186.1 million in cash, cash equivalents and marketable securities. We expect to incur substantial expenditures in the foreseeable future as we seek to advance our current product candidates from our lead programs, a_4b_7 and a_vb_6, and any future product candidates through preclinical and clinical development, the regulatory approval process and, if approved, commercial launch activities. Based on our current operating plan, we believe that our available cash and cash equivalents, together with the net proceeds from this offering, will be sufficient to fund our operating expenses and capital expenditure requirements through . However, our future capital requirements and the period for which we expect our existing resources to support our operations, fund expansion, develop new or enhanced products, or otherwise respond to competitive pressures, may vary significantly from what we expect and we may need to seek additional funds sooner than planned. Our monthly spending levels vary based on new and ongoing research and development and other corporate activities. Because the length of time and activities associated with successful research and development of our product candidates is highly uncertain, we are unable to estimate the actual funds we will require for development and any marketing and commercialization activities for approved products. Our future funding requirements, both near and long-term, will depend on many factors, including, but not limited to:

- the timing, cost and progress of preclinical and clinical development activities;
- the number and scope of preclinical and clinical programs we decide to pursue;
- the progress of the development efforts of parties with whom we have entered or may in the future enter into collaborations and/or research and development agreements;
- the timing and amount of milestone and other payments we may receive or make under our collaboration agreements;
- our ability to maintain our current licenses and research and development programs and to establish new collaboration arrangements;
- the costs involved in prosecuting and enforcing patent and other intellectual property claims;
- the costs of manufacturing our product candidates by third parties;
- the cost of regulatory submissions and timing of regulatory approvals;
- the cost of commercialization activities if our product candidates or any future product candidates are approved for sale, including marketing, sales and distribution costs;
- our efforts to enhance operational systems and hire additional personnel, including personnel to support development of our product candidates; and
- our need to implement additional internal systems and infrastructure, including financial and reporting systems to satisfy our obligations as a public company.

If we are unable to obtain funding on a timely basis or on acceptable terms, we may have to delay, reduce or terminate our research and development programs and preclinical studies or clinical trials, limit strategic opportunities or undergo reductions in our workforce or other corporate restructuring activities. We do not expect to realize revenue from sales of commercial products or royalties from licensed products in the foreseeable future, if at all, and, in no event, before our product candidates are clinically tested, approved for commercialization and successfully marketed. To date, we have primarily financed our operations through payments received under our collaboration agreements, the sale of equity securities and debt financing.

We will be required to seek additional funding in the future and currently intend to do so through additional collaborations and/or licensing agreements, public or private equity offerings or debt financings, credit or loan facilities, or a combination of one or more of these funding sources. If we raise additional funds by issuing equity securities, our stockholders will suffer dilution and the terms of any financing may adversely affect the rights of our stockholders. In addition, as a condition to providing additional funds to us, future investors may demand, and may be granted, rights superior to those of existing stockholders. Our future debt financings, if available, are likely to involve restrictive covenants limiting our flexibility in conducting

future business activities, and, in the event of insolvency, debt holders would be repaid before holders of our equity securities received any distribution of our corporate assets. If we raise additional funds through licensing or collaboration arrangements with third parties, we may have to relinquish valuable rights to our product candidates, or grant licenses on terms that are not favorable to us. We also could be required to seek collaborators for product candidate at an earlier stage than otherwise would be desirable or relinquish our rights to product candidates or technologies that we otherwise would seek to develop or commercialize ourselves. Failure to obtain capital when needed on acceptable terms may force us to delay, limit or terminate our product development and commercialization of our current or future product candidates, which could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Risks Related to Discovery, Development and Commercialization

Our product candidates are in early stages of development and may fail in development or suffer delays that materially and adversely affect their commercial viability. If we or our collaborators are unable to complete development of, or commercialize our product candidates or experience significant delays in doing so, our business will be materially harmed.

We have no products on the market and all of our product candidates are in early stages of development. We expect the Investigational New Drug applications, or INDs, with respect to our a_4b_7 program and MORF-720 to be submitted by the middle of 2020 and as early as the end of 2019, respectively. Additionally, we have a portfolio of targets and programs, including those listed in the "Business — Our Pipeline Programs" section of this prospectus, that are in earlier stages of discovery and preclinical development and may never advance to clinical-stage development. Our ability to achieve and sustain profitability depends on obtaining regulatory approvals for, and successfully commercializing our product candidates, either alone or with third parties, and we cannot guarantee you that we will ever obtain regulatory approval for any of our product candidates. We have limited experience in conducting and managing the clinical trials necessary to obtain regulatory approvals, including approval by the FDA. Before obtaining regulatory approval for the commercial distribution of our product candidates, we or an existing or future collaborator must conduct extensive preclinical tests and clinical trials to demonstrate the safety and efficacy in humans of our product candidates.

We may not have the financial resources to continue development of, or to modify existing or enter into new collaborations for, a product candidate if we experience any issues that delay or prevent regulatory approval of, or our ability to commercialize, product candidates, including:

- preclinical study results may show the product candidate to be less effective than desired or to have harmful or problematic side effects;
- negative or inconclusive results from our clinical trials or the clinical trials of others for product candidates similar to ours, leading to a decision or requirement to conduct additional preclinical testing or clinical trials or abandon a program;
- product-related side effects experienced by patients in our clinical trials or by individuals using drugs or therapeutic biologics similar to our product candidates;
- our third-party manufacturers' inability to successfully manufacture our products;
- inability of any third-party contract manufacturer to scale up manufacturing of our product candidates and those of our collaborators to supply the needs of clinical trials or commercial sales;
- delays in submitting INDs or comparable foreign applications or delays or failures in obtaining the necessary approvals from regulators to commence a clinical trial, or a suspension or termination of a clinical trial once commenced;
- conditions imposed by the FDA or comparable foreign authorities regarding the scope or design of our clinical trials;
- delays in enrolling patients in our clinical trials;

- high drop-out rates of our clinical trial patients;
- inadequate supply or quality of product candidate components or materials or other supplies necessary for the conduct of our clinical trials;
- inability to obtain alternative sources of supply for which we have a single source for product candidate components or materials;
- greater than anticipated costs of our clinical trials;
- manufacturing costs, formulation issues, pricing or reimbursement issues, or other factors that no longer make a product candidate economically feasible;
- harmful side effects or inability of our product candidates to meet efficacy endpoints during clinical trials;
- failure to demonstrate a benefit-risk profile acceptable to the FDA or other regulatory agencies;
- unfavorable FDA or other regulatory agency inspection and review of one or more clinical trial sites or manufacturing facilities used in the testing and manufacture of any of our product candidates;
- failure of our third-party contractors or investigators to comply with regulatory requirements or otherwise meet their contractual obligations in a timely manner, or at all;
- delays and changes in regulatory requirements, policy and guidelines, including the imposition of additional regulatory oversight around clinical testing generally or with respect to our technology in particular; or
- varying interpretations of our data by the FDA and similar foreign regulatory agencies.

We or our collaborators' inability to complete development of, or commercialize our product candidates, or significant delays in doing so due to one or more of these factors, could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Our business is heavily dependent on the success of our a_4b_7 program and of our most advanced product candidate, MORF-720. Existing and future preclinical studies and clinical trials of these product candidates may not be successful, and if we are unable to commercialize these product candidates or experience significant delays in doing so, our business will be materially harmed.

We have invested a significant portion of our efforts and financial resources in the development of our a_4b_7 program and MORF-720. However, our lead product candidates are still in the preclinical stage. Our ability to generate commercial product revenues, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our lead product candidates. We have not previously submitted a new drug application, or NDA, to the FDA, or similar regulatory approval filings to comparable foreign authorities, for any product candidate, and we cannot be certain that our product candidates will be successful in clinical trials or receive regulatory approval. Further, our product candidates may not receive regulatory approval even if they are successful in clinical trials. In addition, regulatory authorities may not complete their review processes in a timely manner, or additional delays may result if an FDA Advisory Committee or other regulatory authority recommends non-approval or restrictions on approval. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action, or changes in regulatory authority policy during the period of product development, clinical trials and the review process. Regulatory authorities also may approve a product candidate for more limited indications than requested or with labeling that includes warnings, contraindications or precautions with respect to conditions of use. Regulatory authorities may also require Risk Evaluation and Mitigation Strategies, or REMS, or the performance of costly post-marketing clinical trials. If we do not receive regulatory approvals for our product candidates, we may not be able to continue our operations. Even if we successfully obtain regulatory approvals to market our product candidates, our revenues will be dependent, in part, upon the size of the markets in the territories for which we gain regulatory approval and have commercial rights. If the markets

for patient subsets that we are targeting are not as significant as we estimate, we may not generate significant revenues from sales of such products, if approved.

We plan to seek regulatory approval to commercialize our product candidates both in the United States and in selected foreign countries. In order to obtain separate regulatory approvals in other countries, we must comply with numerous and varying regulatory requirements of such countries regarding safety and efficacy. Other countries also have their own regulations governing, among other things, clinical trials and commercial sales, as well as pricing and distribution of our product candidates, and we may be required to expend significant resources to obtain regulatory approval, which may not be successful, and to comply with ongoing regulations in these jurisdictions.

The success of our a_4b_7 program, MORF-720, and our other product candidates will depend on many factors, including the following:

- successful completion of necessary preclinical studies to enable the intiation of clinical trials;
- successful enrollment of patients in, and the completion of, our clinical trials;
- receiving required regulatory authorizations for the development and approvals for the commercialization of our product candidates;
- establishing and maintaining arrangements with third-party manufacturers;
- obtaining and maintaining patent and trade secret protection and non-patent exclusivity for our product candidates and their components;
- enforcing and defending our intellectual property rights and claims;
- achieving desirable therapeutic properties for our product candidates' intended indications;
- launching commercial sales of our product candidates, if and when approved, whether alone or in collaboration with third parties;
- acceptance of our product candidates, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other therapies; and
- maintaining an acceptable safety profile of our product candidates through clinical trials and following regulatory approval.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize our product candidates, which would materially harm our business.

If we do not achieve our projected development goals in the time frames we announce and expect, the commercialization of our products may be delayed and, as a result, our stock price may decline.

From time to time, we estimate the timing of the anticipated accomplishment of various scientific, clinical, regulatory and other product development goals, which we sometimes refer to as milestones. These milestones may include the commencement or completion of scientific studies and clinical trials and the submission of regulatory filings. From time to time, we may publicly announce the expected timing of some of these milestones. All of these milestones are and will be based on numerous assumptions. The actual timing of these milestones can vary dramatically compared to our estimates, in some cases for reasons beyond our control. If we do not meet these milestones as publicly announced, or at all, the commercialization of our products may be delayed or never achieved and, as a result, our stock price may decline.

Our approach to the discovery and development of our therapeutic treatments is based on novel technologies that are unproven and may not result in marketable products.

We are developing a pipeline of product candidates using our Morphic integrin technology platform, or MInT Platform. Historically, dozens of integrin-targeted oral small molecule candidates of other companies that entered late-stage clinical trials have failed to result in FDA or EMA approved medicines. We are aware of certain companies currently exploring oral approaches to integrins. For example, Pliant Therapeutics, Inc. is currently in clinic for an a_vb_6 /a_vb_1 oral small-molecule integrin inhibitor. Development efforts and clinical results of these other companies may be unsuccessful, which could result in a negative perception of oral integrins and negatively impact the regulatory approval process of our product candidates, which would have a material and adverse effect on our business. We believe that product candidates identified with our MInT Platform may offer an optimized therapeutic approach by taking advantage of conformational targeting next-generation physics-based technologies augmented with machine learning and artificial intelligence, which allow us to design, iterate and optimize leads in our discovery process. However, the scientific research that forms the basis of our efforts to develop product candidates using our MInT Platform is ongoing and may not result in viable product candidates.

To date, we have not tested any of our product candidates in any clinical studies. We may ultimately discover that our MInT Platform and any product candidates resulting therefrom do not possess certain properties required for therapeutic effectiveness, including the ability to lock specific integrin conformations. Our product candidates may also be unable to remain stable in the human body for the period of time required for the drug to reach the target tissue or they may trigger immune responses that inhibit the ability of the product candidate to reach the target tissue or that cause adverse side effects in humans. We currently have only pre-clinical data regarding oral bioavailability of our product candidates. We may spend substantial funds attempting to introduce these properties and may never succeed in doing so. In addition, product candidates based on our MInT Platform may demonstrate different chemical and pharmacological properties in patients than they do in laboratory studies. Our MInT Platform and any product candidates resulting therefrom may not demonstrate the same chemical and pharmacological properties in humans and may interact with human biological systems in unforeseen, ineffective or harmful ways.

The regulatory approval process for novel product candidates such as ours can be more expensive and take longer than for other, better known or extensively studied product candidates. To our knowledge, no regulatory authority has granted approval for an oral small-molecule integrin inhibitor. We believe the FDA has limited experience with integrin-based therapeutics, which may increase the complexity, uncertainty and length of the regulatory approval process for our product candidates. We and our existing or future collaborators may never receive approval to market and commercialize any product candidate. Even if we or an existing or future collaborator obtains regulatory approval, the approval may be for targets, disease indications or patient populations that are not as broad as we intended or desired or may require labeling that includes significant use or distribution restrictions or safety warnings. We or an existing or future collaborator may be required to perform additional or unanticipated clinical trials to obtain approval or be subject to post-marketing testing requirements to maintain regulatory approval. If the products resulting from our MInT Platform and research programs prove to be ineffective, unsafe or commercially unviable, our MInT Platform and pipeline would have little, if any, value, which would have a material and adverse effect on our business, financial condition, results of operations and prospects.

Preclinical and clinical development involve a lengthy and expensive process, with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results. We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our current product candidates or any future product candidates.

All of our product candidates are in preclinical development and their risk of failure is high. It is impossible to predict when or if any of our product candidates will receive regulatory approval. To obtain the requisite

regulatory approvals to commercialize any product candidates, we must demonstrate through extensive preclinical studies and lengthy, complex and expensive clinical trials that our product candidates are safe and effective in humans. Clinical testing can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. The results of preclinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials. We may be unable to establish clinical endpoints that applicable regulatory authorities would consider clinically meaningful, and a clinical trial can fail at any stage of testing. Differences in trial design between early-stage clinical trials and later-stage clinical trials make it difficult to extrapolate the results of earlier clinical trials to later clinical trials. Moreover, clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in clinical trials have nonetheless failed to obtain marketing approval of their products. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or to unfavorable safety profiles, notwithstanding promising results in earlier trials. There is typically a high rate of failure of product candidates proceeding through clinical trials. Most product candidates that commence clinical trials are never approved as products and there can be no assurance that any of our future clinical trials will ultimately be successful or support clinical development of our current or any of our future product candidates.

Our two lead programs are a_4b_7 and a_vb_6. We intend to advance our a_4b_7 program and MORF-720, our development candidate for our a_vb_6 program, toward IND submissions by the middle of 2020 and as early as the end of 2019, respectively. Commencing our future clinical trials is subject to finalizing the trial design and submitting an IND or similar submission to the FDA or similar foreign regulatory authority. Even after we submit our IND or comparable submissions in other jurisdictions, the FDA or other regulatory authorities could disagree that we have satisfied their requirements to commence our clinical trials or disagree with our study design, which may require us to complete additional preclinical studies or amend our protocols or impose stricter conditions on the commencement of clinical trials.

We or our collaborators may experience delays in initiating or completing clinical trials. We or our collaborators also may experience numerous unforeseen events during, or as a result of, any future clinical trials that we could conduct that could delay or prevent our ability to receive marketing approval or commercialize our a_4b_7 program or MORF-720 or any future product candidates, including:

- regulators or institutional review boards, or IRBs, the FDA or ethics committees may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- we may experience delays in reaching, or fail to reach, agreement on acceptable terms with prospective trial sites and prospective contract research organizations, or CROs the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- clinical trial sites deviating from trial protocol or dropping out of a trial;
- clinical trials of any product candidates may fail to show safety or efficacy, produce negative or inconclusive results and we may decide, or regulators may require us, to conduct additional preclinical studies or clinical trials or we may decide to abandon product development programs;
- the number of subjects required for clinical trials of any product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or subjects may drop out of these clinical trials or fail to return for post-treatment follow-up at a higher rate than we anticipate;
- our third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all, or may deviate from the clinical trial protocol or drop out of the trial, which may require that we add new clinical trial sites or investigators;
- we may elect to, or regulators, IRBs, or ethics committees may require that we or our investigators, suspend or terminate clinical research or trials for various reasons, including noncompliance with

regulatory requirements or a finding that the participants in our trials are being exposed to unacceptable health risks;

- the cost of clinical trials of any of our product candidates may be greater than we anticipate;
- the quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be inadequate to initiate or complete a given clinical trial;
- our inability to manufacture sufficient quantities of our product candidates for use in clinical trials;
- reports from clinical testing of other therapies may raise safety or efficacy concerns about our product candidates;
- our failure to establish an appropriate safety profile for a product candidate based on clinical or preclinical data for such product candidate as well as data emerging from other molecules in the same class as our product candidate; and
- the FDA, EMA or other regulatory authorities may require us to submit additional data such as long-term toxicology studies, or impose other requirements before permitting us to initiate a clinical trial.

Patient enrollment, a significant factor in the timing of clinical trials, is affected by many factors including the size and nature of the patient population, the number and location of clinical sites we enroll, the proximity of patients to clinical sites, the eligibility and exclusion criteria for the trial, the design of the clinical trial, the inability to obtain and maintain patient consents, the risk that enrolled participants will drop out before completion, competing clinical trials and clinicians' and patients' perceptions as to the potential advantages of the product candidate being studied in relation to other available therapies, including any new drugs or therapeutic biologics that may be approved for the indications being investigated by us. Furthermore, we expect to rely on our collaborators, CROs and clinical trial sites to ensure the proper and timely conduct of our future clinical trials, including the patient enrollment process, and we have limited influence over their performance. Additionally, we could encounter delays if treating physicians encounter unresolved ethical issues associated with enrolling patients in future clinical trials of our product candidates in lieu of prescribing existing treatments that have established safety and efficacy profiles.

We could also encounter delays if a clinical trial is suspended or terminated by us, the IRBs of the institutions in which such trials are being conducted, or the FDA, EMA or other regulatory authorities, or if a clinical trial is recommended for suspension or termination by the Data Safety Monitoring Board, or the DSMB, for such trial. A suspension or termination may be imposed due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA, EMA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a product or treatment, failure to establish or achieve clinically meaningful trial endpoints, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. Clinical studies may also be delayed or terminated as a result of ambiguous or negative interim results. Many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates. Further, the FDA, EMA or other regulatory authorities may disagree with our clinical trial design and our interpretation of data from clinical trials, or may change the requirements for approval even after they have reviewed and commented on the design for our clinical trials.

Our product development costs will increase if we experience delays in clinical testing or marketing approvals. We do not know whether any of our clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all. Significant clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize our product candidates and may allow our competitors to bring products to market before we do, potentially impairing our ability to successfully commercialize our product candidates and harming our business and results of operations. Any

delays in our clinical development programs may harm our business, financial condition and results of operations significantly.

Results of preclinical studies and early clinical trials may not be predictive of results of future clinical trials.

The outcome of preclinical studies and early clinical trials may not be predictive of the success of later clinical trials, and interim results of clinical trials. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials after achieving positive results in earlier development, and we could face similar setbacks. The design of a clinical trial can determine whether its results will support approval of a product and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. We have limited experience in designing clinical trials and may be unable to design and execute a clinical trial to support marketing approval. In addition, preclinical and clinical data are often susceptible to varying interpretations and analyses. Many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval for the product candidates. Even if we, or future collaborators, believe that the results of clinical trials for our product candidates warrant marketing approval, the FDA or comparable foreign regulatory authorities may disagree and may not grant marketing approval of our product candidates.

In some instances, there can be significant variability in safety or efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in trial procedures set forth in protocols, differences in the size and type of the patient populations, changes in and adherence to the dosing regimen and other clinical trial protocols and the rate of dropout among clinical trial patients. If we fail to receive positive results in clinical trials of our product candidates, the development timeline and regulatory approval and commercialization prospects for our most advanced product candidates, and, correspondingly, our business and financial prospects would be negatively impacted.

Interim and preliminary or topline data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we may publish interim topline or preliminary data from our clinical trials. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Preliminary or topline data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary or topline data we previously published. As a result, interim and preliminary data should be viewed with caution until the final data are available. Adverse differences between interim or preliminary or topline data and final data could significantly harm our reputation and business prospects.

Our future clinical trials or those of our current and future collaborators may reveal significant adverse events not seen in our preclinical studies and may result in a safety profile that could inhibit regulatory approval or market acceptance of any of our product candidates.

If significant adverse events or other side effects are observed in any of our clinical trials, we may have difficulty recruiting patients to our clinical trials, patients may drop out of our trials, or we may be required to abandon the trials or our development efforts of one or more product candidates altogether. For example, progressive multifocal leukoencephalopathy, or PML, has been observed by others as an adverse effect during late-stage clinical development of infusible antibody inhibitor of a_4b_1 integrin, natalizumab. This adverse effect was not observed in the preclinical studies or during early clinical development of natalizumab. We, the FDA, EMA or other applicable regulatory authorities, or an IRB may suspend clinical trials of a product candidate at any time for various reasons, including a belief that subjects or patients in such trials are being exposed to unacceptable health risks or adverse side effects. Some potential

therapeutics developed in the biotechnology industry that initially showed therapeutic promise in early-stage trials have later been found to cause side effects that prevented their further development. Even if the side effects do not preclude the product candidate from obtaining or maintaining marketing approval, undesirable side effects may inhibit market acceptance of the approved product due to its tolerability versus other therapies. Any of these developments could materially harm our business, financial condition and prospects.

We may not be successful in our efforts to use our MInT Platform to expand our pipeline of product candidates and develop marketable products.

The success of our business depends in part upon our ability to discover, develop and commercialize products based on our MInT Platform. a_4b_7 and a_vb_6 are our lead preclinical programs and our research programs may fail to identify other potential product candidates for clinical development for a number of reasons. Our research methodology may be unsuccessful in identifying potential product candidates or our potential product candidates may be shown to have harmful side effects or may have other characteristics that may make the products unmarketable or unlikely to receive marketing approval. If any of these events occur, we may be forced to abandon our development efforts for a program or for multiple programs, which would materially harm our business and could potentially cause us to cease operations. Research programs to identify new product candidates require substantial technical, financial and human resources.

We may expend our limited resources to pursue a particular product candidate and fail to capitalize on product candidates that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we focus our research and development efforts on certain selected product candidates. For example, we are initially focused on our lead wholly-owned a_4b_7 program and for our most advanced product candidate, MORF-720. As a result, we may forgo or delay pursuit of opportunities with other product candidates that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable product candidates. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

We face competition from entities that have developed or may develop product candidates for autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer, including companies developing novel treatments and technology platforms. If these companies develop technologies or product candidates more rapidly than we do or their technologies are more effective, our ability to develop and successfully commercialize product candidates may be adversely affected.

The development and commercialization of drugs is highly competitive. Our product candidates, if approved, will face significant competition and our failure to effectively compete may prevent us from achieving significant market penetration. Most of our competitors have significantly greater resources than we do and we may not be able to successfully compete. We compete with a variety of multinational biopharmaceutical companies, specialized biotechnology companies and emerging biotechnology companies, as well as with technologies and product candidates being developed at universities and other research institutions. Our competitors have developed, are developing or will develop product candidates and processes competitive with our product candidates and processes. Competitive therapeutic treatments include those that have already been approved and accepted by the medical community and any new treatments, including those based on novel technology platforms that enter the market. We believe that a significant number of products are currently under development, and may become commercially available in the future, for the treatment of conditions for which we are trying, or may try, to develop product candidates. There is intense and rapidly

evolving competition in the biotechnology, biopharmaceutical and integrin and immunoregulatory therapeutics fields. Competition from many sources exists or may arise in the future. Our competitors include larger and better funded biopharmaceutical, biotechnological and therapeutics companies, including companies focused on therapeutics for autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer, as well as numerous small companies. Moreover, we also compete with current and future therapeutics developed at universities and other research institutions. Some of these companies are well-capitalized and, in contrast to us, have significant clinical experience, and may include our existing or future collaborators. In addition, these companies compete with us in recruiting scientific and managerial talent.

Our success will depend partially on our ability to develop and commercialize therapeutics that are safer and more effective than competing products. Our commercial opportunity and success will be reduced or eliminated if competing products are safer, more effective, or less expensive than the therapeutics we develop.

Our a_4b_7 program, initially under development for treatment of IBD, if approved would face competition from approved IBD treatments marketed by UCB, Johnson & Johnson, Biogen Inc., and Pfizer Inc., in addition to other major pharmaceutical companies. In addition, we are aware of IBD treatments in development by Roche Holding AG, AbbVie Inc., Gilead Sciences, RedHill Biopharma Ltd, Celgene Corporation, Eli Lilly and Company, and Boehringer Ingelheim GmbH. Further, Takeda Pharmaceutical Company Ltd. currently markets Entyvio, which is an a_4b_7 monoclonal antibody to treat ulcerative colitis and Crohn's disease. Protagonist Therapeutics, Inc. also has a Phase 1 clinical gut-restricted a_4b_7 program under development.

MORF-720, under development for the treatment of IPF, if approved, would face competition from approved IPF treatments marketed by Roche Holding AG and Boehringer Ingelheim GmbH. In addition, we are aware of IPF treatments in development by Galapagos NV. Further, we are aware of programs targeting a_vb_6 that are currently being investigated in preclinical studies or clinical trials by companies including Biogen Inc., Pliant Therapeutics, Inc., and Indalo Therapeutics, Inc.

Many of these competitors have significantly greater financial, technical, manufacturing, marketing, sales, and supply resources or experience than we have. If we successfully obtain approval for any product candidate, we will face competition based on many different factors, including the safety and effectiveness of our products, the ease with which our products can be administered and the extent to which patients accept relatively new routes of administration, the timing and scope of regulatory approvals for these products, the availability and cost of manufacturing, marketing and sales capabilities, price, reimbursement coverage and patent position. Competing products could present superior treatment alternatives, including by being more effective, safer, less expensive or marketed and sold more effectively than any products we may develop. Competitive products may make any products we develop obsolete or noncompetitive before we recover the expense of developing and commercializing our product candidates. Such competitors could also recruit our employees, which could negatively impact our level of expertise and our ability to execute our business plan.

Our current product candidates or any future product candidates may not achieve adequate market acceptance among physicians, patients, healthcare third-party payors and others in the medical community necessary for commercial success, if approved, and we may not generate any future revenue from the sale or licensing of product candidates.

Even if regulatory approval is obtained for a product candidate, we may not generate or sustain revenue from sales of the product due to factors such as whether the product can be sold at a competitive cost and whether it will otherwise be accepted in the market. Historically, several injectable integrin inhibitors have been approved by the FDA for treatment of inflammatory bowel disease, multiple sclerosis, psoriasis, acute coronary syndrome and dry eye disease. However, our product candidates are based on a novel approach to

oral integrin therapies, and while integrins are a well-understood receptor family, to date, no oral small molecule integrin therapies have been approved by the FDA. Market participants with significant influence over acceptance of new treatments, such as physicians and third-party payors, may not adopt an orally bioavailable product based on our novel technologies, and we may not be able to convince the medical community and third-party payors to accept and use, or to provide favorable reimbursement for, any product candidates developed by us or our existing or future collaborators. Market acceptance of our product candidates will depend on, among other factors:

- the timing of our receipt of any marketing and commercialization approvals;
- the terms of any approvals and the countries in which approvals are obtained;
- the safety and efficacy of our product candidates as demonstrated in clinical trials;
- the prevalence and severity of any adverse side effects associated with our product candidates;
- limitations or warnings contained in any labeling approved by the FDA or other regulatory authority;
- relative convenience and ease of administration of our product candidates;
- the willingness of patients to accept any new methods of administration;
- unfavorable publicity relating to our current product candidates or any future product candidates;
- the success of our physician education programs;
- the effectiveness of sales and marketing efforts;
- the availability of coverage and adequate reimbursement from government and third-party payors;
- the pricing of our products, particularly as compared to alternative treatments; and
- the availability of alternative effective treatments for the disease indications our product candidates are intended to treat and the relative risks, benefits and costs of those treatments.

Sales of medical products also depend on the willingness of physicians to prescribe the treatment, which is likely to be based on a determination by these physicians that the products are safe, therapeutically effective and cost effective. In addition, the inclusion or exclusion of products from treatment guidelines established by various physician groups and the viewpoints of influential physicians can affect the willingness of other physicians to prescribe the treatment. We cannot predict whether physicians, physicians' organizations, hospitals, other healthcare providers, government agencies or private insurers will determine that our product is safe, therapeutically effective and cost effective as compared with competing treatments. If any product candidate is approved but does not achieve an adequate level of acceptance by such parties, we may not generate or derive sufficient revenue from that product candidate and may not become or remain profitable.

Because our product candidates are based on new technology, we expect that they will require extensive research and development and have substantial manufacturing and processing costs. In addition, our estimates regarding potential market size for any indication may be materially different from what we discover to exist at the time we commence commercialization, if any, for a product, which could result in significant changes in our business plan and have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if any product candidate we commercialize fails to achieve market acceptance, it could have a material and adverse effect on our business, financial condition, results of operations and prospects.

If in the future we are unable to establish U.S. or global sales and marketing capabilities or enter into agreements with third parties to sell and market our product candidates, we may not be successful in commercializing our product candidates if they are approved and we may not be able to generate any revenue.

We currently do not have a marketing or sales team for the marketing, sales and distribution of any of our product candidates that are able to obtain regulatory approval. To commercialize any product candidates

after approval, we must build on a territory-by-territory basis marketing, sales, distribution, managerial and other non-technical capabilities or arrange with third parties to perform these services, and we may not be successful in doing so. If our product candidates receive regulatory approval, we may decide to establish an internal sales or marketing team with technical expertise and supporting distribution capabilities to commercialize our product candidates, which will be expensive and time consuming and will require significant attention of our executive officers to manage. For example, some state and local jurisdictions have licensing and continuing education requirements for pharmaceutical sales representatives, which requires time and financial resources. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of any of our product candidates that we obtain approval to market.

With respect to the commercialization of all or certain of our product candidates, we may choose to collaborate, either globally or on a territory-by-territory basis, with third parties that have direct sales forces and established distribution systems, either to augment our own sales force and distribution systems or in lieu of our own sales force and distribution systems. If we are unable to enter into such arrangements when needed on acceptable terms, or at all, we may not be able to successfully commercialize any of our product candidates that receive regulatory approval or any such commercialization may experience delays or limitations. If we are not successful in commercializing our product candidates, either on our own or through collaborations with one or more third parties, our future product revenue will suffer and we may incur significant additional losses.

If any of our product candidates receives marketing approval and we or others later identify undesirable side effects caused by the product candidate, our ability to market and derive revenue from the product candidates could be compromised.

Undesirable side effects caused by our product candidates could cause regulatory authorities to interrupt, delay or halt clinical trials and could result in more restrictive labeling or the delay or denial of regulatory approval by the FDA or other regulatory authorities. Results of future clinical trials could reveal a high and unacceptable severity and prevalence of side effects. In such an event, our future clinical trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of or deny approval of our product candidates for any or all targeted indications. Such side effects could also affect patient recruitment or the ability of enrolled patients to initiate or complete the clinical trial or result in potential product liability claims. Any of these occurrences may materially and adversely affect our business, financial condition, results of operations and prospects.

Further, clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients and limited duration of exposure, rare and severe side effects of our product candidates may only be uncovered with a significantly larger number of patients exposed to the product candidate.

In the event that any of our product candidates receive regulatory approval and we or others identify undesirable side effects caused by such product, any of the following adverse events could occur:

- regulatory authorities may withdraw their approval of the product or seize the product;
- we may be required to recall the product or change the way the product is administered to patients;
- additional restrictions may be imposed on the marketing of the particular product or the manufacturing processes for the product or any component thereof;
- we may be subject to fines, injunctions or the imposition of civil or criminal penalties;
- regulatory authorities may require the addition of labeling statements, such as a boxed warning or a contraindication;
- we may be required to create a Medication Guide outlining the risks of such side effects for distribution to patients;
- we could be sued and held liable for harm caused to patients;
- the product may become less competitive; and
- our reputation may suffer.

Any of these occurrences could have a material and adverse effect on our business, financial condition, results of operations and prospects.

We anticipate that some of our product candidates may be studied in combination with third-party drugs, some of which may still be in development, and we have limited or no control over the supply, regulatory status, or regulatory approval of such drugs.

Some of our product candidates may be studied in combination with third-party drugs. For example, we may explore the use of our oral small-molecule integrin therapeutics targeting a_4b_7 as a combination therapy with other drugs for the treatment of inflammatory bowel disease. The development of product candidates for use in combination with another product or product candidate may present challenges that are not faced for single agent product candidates. The FDA or other regulatory authorities may require us to use more complex clinical trial designs in order to evaluate the contribution of each product and product candidate to any observed effects. It is possible that the results of these trials could show that any positive previous trial results are attributable to the combination therapy and not our product candidates. Moreover, following product approval, the FDA or other regulatory authorities may require that products used in conjunction with each other be cross labeled for combined use. To the extent that we do not have rights to the other product, this may require us to work with a third party to satisfy such a requirement. Moreover, developments related to the other product may impact our clinical trials for the combination as well as our commercial prospects should we receive marketing approval. Such developments may include changes to the other product's safety or efficacy profile, changes to the availability of the approved product, and changes to the standard of care.

If we pursue such combination therapies, we cannot be certain that a steady supply of such drugs will be commercially available. Any failure to enter into such commercial relationships, or the expense of purchasing therapies in the market, may delay our development timelines, increase our costs and jeopardize our ability to develop our product candidates as commercially viable combination therapies. The occurrence of any of these could adversely affect our business, results of operations and financial condition.

In the event that any future collaborator or supplier cannot continue to supply their products on commercially reasonable terms, we would need to identify alternatives for accessing such products. Additionally, should the supply of products of any collaborator or supplier be interrupted, delayed or otherwise be unavailable to us, our clinical trials may be delayed. In the event we are unable to source a supply of any alternative therapy, or are unable to do so on commercially reasonable terms, our business, results of operations and financial condition may be adversely affected.

Risks Related to Our Reliance on Third Parties

We have entered into collaborations with AbbVie and Janssen and may, in the future, seek to enter into collaborations with other third parties for the discovery, development and commercialization of our product candidates. If our collaborators cease development efforts under our collaboration agreements, or if any of those agreements are terminated, these collaborations may fail to lead to commercial products and we may never receive milestone payments or future royalties under these agreements.

Our collaborations with AbbVie and Janssen are important to our business. We have entered into collaborations with AbbVie and Janssen to discover or develop certain integrin-based therapeutics, and such collaborations currently represent a significant portion of our product pipeline. In particular, MORF-720 is developed in collaboration with AbbVie. In both collaborations, we will conduct research and development activities through the completion of IND-enabling studies, upon which AbbVie and Janssen can exercise their options to develop and commercialize a successful product candidate. We have derived substantially all of our revenue to date from these collaboration agreements, and we expect a significant portion of our future revenue and cash resources to be derived from these agreements or other similar agreements into which we may enter in the future. Revenue from research and development collaborations depends upon continuation of the collaborations, payments for research and development services and resulting options to acquire any licenses of successful product candidates, and the achievement of milestones, contingent payments and royalties, if any, derived from future products developed from our research. If we are unable to successfully advance the development of our product candidates or achieve milestones, revenue and cash

resources from milestone payments under our collaboration agreements will be substantially less than expected.

In addition, we may in the future seek third-party collaborators for research, development and commercialization of other therapeutic technologies or product candidates. Biopharmaceutical companies are our prior and likely future collaborators for any marketing, distribution, development, licensing or broader collaboration arrangements. If we fail to enter into future collaborations on commercially reasonable terms, or at all, or such collaborations are not successful, we may not be able to execute our strategy to develop certain targets, product candidates or disease areas that we believe could benefit from the resources of either larger biopharmaceutical companies or those specialized in a particular area of relevance.

With respect to our existing collaboration agreements, and what we expect will be the case with any future collaboration agreements, we have and expect to have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of our product candidates. Moreover, our ability to generate revenues from these arrangements will depend on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements.

Collaborations involving our product candidates currently pose, and will continue to pose, the following risks to us:

- collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not pursue development and commercialization of our product candidates or may elect not to continue or renew development or commercialization programs based on preclinical studies or clinical trial results, changes in the collaborators' strategic focus or available funding, or external factors such as an acquisition that diverts resources or creates competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours;
- collaborators with marketing and distribution rights to one or more products may not commit sufficient resources to the marketing and distribution of such product or products;
- collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to litigation or potential liability;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability;
- disputes may arise between the collaborators and us that result in the delay or termination of the research, development or commercialization of our product candidates or that result in costly litigation or arbitration that diverts management attention and resources; and
- collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates.

As a result of the foregoing, our current and any future collaboration agreements may not lead to development or commercialization of our product candidates in the most efficient manner or at all. If a collaborator of ours were to be involved in a business combination, the continued pursuit and emphasis on our product development or commercialization program could be delayed, diminished or terminated. Any failure to successfully develop or commercialize our product candidates pursuant to our current or any

future collaboration agreements could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Moreover, to the extent that any of our existing or future collaborators were to terminate a collaboration agreement, we may be forced to independently develop these product candidates, including funding preclinical studies or clinical trials, assuming marketing and distribution costs and defending intellectual property rights, or, in certain instances, abandon product candidates altogether, any of which could result in a change to our business plan and have a material adverse effect on our business, financial condition, results of operations and prospects.

Our existing discovery collaboration with Schrödinger is important to our business. If we are unable to maintain this collaboration, or if this collaboration is not successful, our business could be adversely affected.

In June 2015, we entered into a Collaboration Agreement with Schrödinger, which was subsequently amended in March 2018, or the Schrödinger Agreement. Under the collaboration, Schrödinger will use its technology platform to perform virtual screens of members of the target class of human integrins, and we and Schrödinger will collaborate to facilitate prioritization of targets, perform target validation and analysis, identify leads and perform lead optimization. See "Business — Schrödinger Agreement." Schrödinger has granted us an exclusive license for all intellectual property for our product candidates.

Because we currently rely on Schrödinger for a substantial portion of our discovery capabilities, if Schrödinger delays or fails to perform its obligations under the Schrödinger Agreement, disagrees with our interpretation of the terms of the collaboration or our discovery plan or terminates the Schrödinger Agreement, our pipeline of product candidates would be adversely affected. Schrödinger may also fail to properly maintain or defend the intellectual property we have licensed from them, or even infringe upon, our intellectual property rights, leading to the potential invalidation of our intellectual property or subjecting us to litigation or arbitration, any of which would be time-consuming and expensive. Additionally, either party has the right to terminate the collaboration pursuant to the terms of the Schrödinger Agreement. If our collaboration with Schrödinger is terminated, especially during our discovery phase, the development of our product candidates would be materially delayed or harmed.

We may have conflicts with our collaborators that could delay or prevent the development or commercialization of our product candidates.

We may have conflicts with our collaborators, such as conflicts concerning the interpretation of preclinical or clinical data, the achievement of milestones, the interpretation of contractual obligations, payments for services, development obligations or the ownership of intellectual property developed during our collaboration. If any conflicts arise with any of our collaborators, such collaborator may act in a manner that is adverse to our best interests. Any such disagreement could result in one or more of the following, each of which could delay or prevent the development or commercialization of our product candidates, and in turn prevent us from generating revenues: unwillingness on the part of a collaborator to pay us milestone payments or royalties we believe are due to us under a collaboration, which could require us to raise additional capital; uncertainty regarding ownership of intellectual property rights arising from our collaborative activities, which could prevent us from entering into additional collaborations; unwillingness by the collaborator to cooperate in the development or manufacture of the product, including providing us with product data or materials; unwillingness on the part of a collaborator to keep us informed regarding the progress of its development and commercialization activities or to permit public disclosure of the results of those activities; initiating of litigation or alternative dispute resolution options by either party to resolve the dispute; or attempts by either party to terminate the agreement.

We may not successfully engage in strategic transactions, including any additional collaborations we seek, which could adversely affect our ability to develop and commercialize product candidates, impact our cash position, increase our expenses and present significant distractions to our management.

From time to time, we may consider strategic transactions, such as additional collaborations, acquisitions of companies, asset purchases and out- or in-licensing of product candidates or technologies that we believe will complement or augment our existing business. In particular, we will evaluate and, if strategically attractive, seek to enter into additional collaborations, including with major biotechnology or biopharmaceutical companies. The competition for collaborators is intense, and the negotiation process is time-consuming and complex. Any new collaboration may be on terms that are not optimal for us, and we may not be able to maintain any new collaboration if, for example, development or approval of a product candidate is delayed, sales of an approved product candidate do not meet expectations or the collaborator terminates the collaboration. In addition, a significant number of recent business combinations among large pharmaceutical companies has resulted in a reduced number of potential future strategic partners. Our collaborators may consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. Our ability to reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the strategic partner's resources and expertise, the terms and conditions of the proposed collaboration and the proposed strategic partner's evaluation of a number of factors. These factors may include the design or results of clinical trials, the likelihood of approval by the FDA or similar regulatory authorities outside the United States, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. Moreover, if we acquire assets with promising markets or technologies, we may not be able to realize the benefit of acquiring such assets if we are not able to successfully integrate them with our existing technologies. We may encounter numerous difficulties in developing, testing, manufacturing and marketing any new products resulting from a strategic acquisition that delay or prevent us from realizing their expected benefits or enhancing our business.

We cannot assure you that following any such collaboration, or other strategic transaction, we will achieve the expected synergies to justify the transaction. For example, such transactions may require us to incur non-recurring or other charges, increase our near- and long-term expenditures and pose significant integration or implementation challenges or disrupt our management or business. These transactions would entail numerous operational and financial risks, including exposure to unknown liabilities, disruption of our business and diversion of our management's time and attention in order to manage a collaboration or develop acquired products, product candidates or technologies, incurrence of substantial debt or dilutive issuances of equity securities to pay transaction consideration or costs, higher than expected collaboration, acquisition or integration costs, write-downs of assets or goodwill or impairment charges, increased amortization expenses, difficulty and cost in facilitating the collaboration or combining the operations and personnel of any acquired business, impairment of relationships with key suppliers, manufacturers or customers of any acquired business due to changes in management and ownership and the inability to retain key employees of any acquired business.

Accordingly, although there can be no assurance that we will undertake or successfully complete any transactions of the nature described above, any transactions that we do complete may be subject to the foregoing or other risks and would have a material and adverse effect on our business, financial condition, results of operations and prospects. Conversely, any failure to enter any additional collaboration or other strategic transaction that would be beneficial to us could delay the development and potential commercialization of our product candidates and have a negative impact on the competitiveness of any product candidate that reaches market.

We expect to rely on third parties to conduct certain of our preclinical studies or clinical trials. If those third parties do not perform as contractually required, fail to satisfy legal or regulatory requirements, miss expected deadlines or terminate the relationship, our development program could be delayed with potentially material and adverse effects on our business, financial condition, results of operations and prospects.

We intend to rely in the future on third-party clinical investigators, CROs, clinical data management organizations and consultants to assist or provide the design, conduct, supervision and monitoring of preclinical studies and clinical trials of our product candidates. Because we intend to rely on these third parties and will not have the ability to conduct all preclinical studies or clinical trials independently, we will have less control over the timing, quality and other aspects of preclinical studies and clinical trials than we would have had we conducted them on our own. These investigators, CROs and consultants will not be our employees and we will have limited control over the amount of time and resources that they dedicate to our programs. These third parties may have contractual relationships with other entities, some of which may be our competitors, which may draw time and resources from our programs. The third parties with which we may contract might not be diligent, careful or timely in conducting our preclinical studies or clinical trials, resulting in the preclinical studies or clinical trials being delayed or unsuccessful.

If we cannot contract with acceptable third parties on commercially reasonable terms, or at all, or if these third parties do not carry out their contractual duties, satisfy legal and regulatory requirements for the conduct of preclinical studies or clinical trials or meet expected deadlines, our clinical development programs could be delayed and otherwise adversely affected. In all events, we will be responsible for ensuring that each of our preclinical studies and clinical trials are conducted in accordance with the general investigational plan and protocols for the trial as well as applicable legal and regulatory requirements. The FDA generally requires preclinical studies to be conducted in accordance with good laboratory practices and clinical trials to be conducted in accordance with good clinical practices, including for designing, conducting, recording and reporting the results of preclinical studies and clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of clinical trial participants are protected. Our reliance on third parties that we do not control will not relieve us of these responsibilities and requirements. Any adverse development or delay in our preclinical studies or clinical trials as a result of our reliance on third parties could have a material and adverse effect on our business, financial condition, results of operations and prospects.

If any of our relationships with these third-party CROs or others terminate, we may not be able to enter into arrangements with alternative CROs or other third parties or to do so on commercially reasonable terms. Switching or adding additional CROs involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new CRO begins work. As a result, delays may occur, which can materially impact our ability to meet our desired clinical development timelines.

We rely on third-party manufacturers and suppliers to supply components of our product candidates. The loss of our third-party manufacturers or suppliers, or our or their failure to comply with applicable regulatory requirements or to supply sufficient quantities at acceptable quality levels or prices, or at all, would materially and adversely affect our business.

We do not own or operate facilities for drug manufacturing, storage, distribution or quality testing. We currently rely, and may continue to rely, on third-party contract manufacturers, including in the U.K. and China, to manufacture bulk drug substances, drug products, raw materials, samples, components, or other materials and reports. Reliance on third-party manufacturers may expose us to different risks than if we were to manufacture product candidates ourselves. Under our collaboration agreements with AbbVie and Janssen, our collaborators will assume responsibility for the manufacturing according to the terms of those agreements for licensed products. There can be no assurance that our preclinical and clinical development product supplies will not be limited, interrupted, terminated or of satisfactory quality or continue to be

available at acceptable prices. In particular, any replacement of our manufacturer could require significant effort and expertise because there may be a limited number of qualified replacements.

The manufacturing process for a product candidate is subject to FDA and foreign regulatory authority review. We, and our suppliers and manufacturers, must meet applicable manufacturing requirements and undergo rigorous facility and process validation tests required by regulatory authorities in order to comply with regulatory standards, such as current Good Manufacturing Practices, or cGMPs. Securing marketing approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the FDA and foreign regulatory authorities. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or comparable foreign regulatory authorities, we may not be able to rely on their manufacturing facilities for the manufacture of elements of our product candidates. Moreover, we do not control the manufacturing process at our contract manufacturers, and are completely dependent on them for compliance with current regulatory requirements. In the event that any of our manufacturers fails to comply with such requirements or to perform its obligations in relation to quality, timing or otherwise, or if our supply of components or other materials becomes limited or interrupted for other reasons, we may be forced to enter into an agreement with another third party, which we may not be able to do on reasonable terms, if at all. In some cases, the technical skills or technology required to manufacture our product candidates may be unique or proprietary to the original manufacturer and we may have difficulty transferring such to another third party. These factors would increase our reliance on such manufacturer or require us to obtain a license from such manufacturer in order to enable us, or to have another third party, manufacture our product candidates. If we are required to change manufacturers for any reason, we will be required to verify that the new manufacturer maintains facilities and procedures that comply with quality standards and with all applicable regulations and guidelines; and we may be required to repeat some of the development program. The delays associated with the verification of a new manufacturer could negatively affect our ability to develop product candidates in a timely manner or within budget.

We expect to continue to rely on third-party manufacturers if we receive regulatory approval for any product candidate. To the extent that we have existing, or enter into future, manufacturing arrangements with third parties, we will depend on these third parties to perform their obligations in a timely manner consistent with contractual and regulatory requirements, including those related to quality control and assurance. Any manufacturing facilities used to produce our products will be subject to periodic review and inspection by the FDA and foreign regulatory authorities, including for continued compliance with cGMP requirements, quality control, quality assurance and corresponding maintenance of records and documents. If we are unable to obtain or maintain third-party manufacturing for product candidates, or to do so on commercially reasonable terms, we may not be able to develop and commercialize our product candidates successfully. Our or a third party's failure to execute on our manufacturing requirements, comply with cGMPs or maintain a compliance status acceptable to the FDA or foreign regulatory authorities could adversely affect our business in a number of ways, including:

- an inability to initiate or continue clinical trials of product candidates under development;
- delay in submitting regulatory applications, or receiving regulatory approvals, for product candidates;
- loss of the cooperation of existing or future collaborators;
- subjecting third-party manufacturing facilities to additional inspections by regulatory authorities;
- requirements to cease distribution or to recall batches of our product candidates; and
- in the event of approval to market and commercialize a product candidate, an inability to meet commercial demands for our products.

Additionally, our contract manufacturers may experience manufacturing difficulties due to resource constraints or as a result of labor disputes or unstable political environments. If our contract manufacturers were to encounter any of these difficulties, our ability to provide our product candidates to patients in

preclinical and clinical trials, or to provide product for treatment of patients once approved, would be jeopardized.

The manufacturing of small molecules is complex and our third-party manufacturers may encounter difficulties in production. If we or any of our third-party manufacturers encounter such difficulties, our ability to provide supply of our product candidates for clinical trials, our ability to obtain marketing approval, or our ability to provide supply of our products for patients, if approved, could be delayed or stopped.

Our product candidates are biopharmaceuticals and the process of manufacturing biopharmaceuticals is complex, time-consuming, highly regulated and subject to multiple risks. Our contract manufacturers must comply with legal requirements, cGMPs and guidelines for the manufacturing of biopharmaceuticals used in clinical trials and, if approved, marketed products. Our contract manufacturers may have limited experience in the manufacturing of cGMP batches.

Manufacturing biopharmaceuticals is highly susceptible to product loss due to contamination, equipment failure, improper installation or operation of equipment, vendor or operator error, inconsistency in yields, variability in product characteristics and difficulties in scaling the production process. Even minor deviations from normal manufacturing processes could result in reduced production yields, product defects and other supply disruptions. If microbial, viral or other contaminations are discovered at our third-party manufacturers' facilities, such facilities may need to be closed for an extended period of time to investigate and remedy the contamination, which could delay clinical trials and adversely harm our business. Moreover, if the FDA determines that our third-party manufacturers' facilities are not in compliance with FDA laws and regulations, including those governing cGMPs, the FDA may deny NDA approval until the deficiencies are corrected or we replace the manufacturer in our NDA with a manufacturer that is in compliance.

In addition, there are risks associated with large scale manufacturing for clinical trials or commercial scale including, among others, cost overruns, potential problems with process scale-up, process reproducibility, stability issues, compliance with cGMPs, lot consistency and timely availability of raw materials. Even if our collaborators obtain regulatory approval for any of our product candidates, there is no assurance that manufacturers will be able to manufacture the approved product to specifications acceptable to the FDA or other regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential launch of the product or to meet potential future demand. If our manufacturers are unable to produce sufficient quantities for clinical trials or for commercialization, commercialization efforts would be impaired, which would have an adverse effect on our business, financial condition, results of operations and prospects.

Scaling up a biopharmaceutical manufacturing process is a difficult and uncertain task, and our third-party manufacturers may not have the necessary capabilities to complete the implementation, manufacturing and development process. If we are unable to adequately validate or scale-up the manufacturing process at our current manufacturers' facilities, we will need to transfer to another manufacturer and complete the manufacturing validation process, which can be lengthy. If we are able to adequately validate and scale-up the manufacturing process for our product candidates with a contract manufacturer, we will still need to negotiate with such contract manufacturer an agreement for commercial supply and it is not certain we will be able to come to agreement on terms acceptable to us.

We cannot assure you that any stability or other issues relating to the manufacture of any of our product candidates or products will not occur in the future. If our third-party manufacturers were to encounter any of these difficulties, our ability to provide any product candidates to patients in planned clinical trials and products to patients, once approved, would be jeopardized. Any delay or interruption in the supply of clinical trial supplies could delay the completion of planned clinical trials, increase the costs associated with maintaining clinical trial programs and, depending upon the period of delay, require us to commence new clinical trials at additional expense or terminate clinical trials completely. Any adverse developments

affecting clinical or commercial manufacturing of our product candidates or products may result in shipment delays, inventory shortages, lot failures, product withdrawals or recalls, or other interruptions in the supply of our product candidates or products. We may also have to take inventory write-offs and incur other charges and expenses for product candidates or products that fail to meet specifications, undertake costly remediation efforts or seek more costly manufacturing alternatives. Accordingly, failures or difficulties faced at any level of our supply chain could adversely affect our business and delay or impede the development and commercialization of any of our product candidates or products, if approved, and could have an adverse effect on our business, prospects, financial condition and results of operations.

As part of our process development efforts, we also may make changes to the manufacturing processes at various points during development, for various reasons, such as controlling costs, achieving scale, decreasing processing time, increasing manufacturing success rate or other reasons. Such changes carry the risk that they will not achieve their intended objectives, and any of these changes could cause our product candidates to perform differently and affect the results of our ongoing clinical trials or future clinical trials. In some circumstances, changes in the manufacturing process may require us to perform *ex vivo* comparability studies and to collect additional data from patients prior to undertaking more advanced clinical trials. For instance, changes in our process during the course of clinical development may require us to show the comparability of the product used in earlier clinical phases or at earlier portions of a trial to the product used in later clinical phases or later portions of the trial.

Risks Related to Our Business and Operations

We will need to grow our organization, and we may experience difficulties in managing our growth and expanding our operations, which could adversely affect our business.

As of March 31, 2019, we had approximately 60 full-time employees. As our development and commercialization plans and strategies develop, and as we transition into operating as a public company, we expect to expand our employee base for managerial, operational, financial and other resources. In addition, we have limited experience in product development. As our product candidates enter and advance through preclinical studies and clinical trials, we will need to expand our development and regulatory capabilities and contract with other organizations to provide manufacturing and other capabilities for us. In the future, we expect to have to manage additional relationships with collaborators or partners, suppliers and other organizations. Our ability to manage our operations and future growth will require us to continue to improve our operational, financial and management controls, reporting systems and procedures. We may not be able to implement improvements to our management information and control systems in an efficient or timely manner and may discover deficiencies in existing systems and controls. Our inability to successfully manage our growth and expand our operations could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Any inability to attract and retain qualified key management and technical personnel would impair our ability to implement our business plan.

Our success largely depends on the continued service of key management, advisors and other specialized personnel, including Praveen P. Tipirneni, M.D., our chief executive officer, Robert E. Farrell, Jr., CPA, our vice president of finance and operations and treasurer, Bruce N. Rogers, Ph.D., our chief scientific officer, Alexey A. Lugovskoy, Ph.D., our chief development officer, and Timothy A. Springer, Ph.D., our founder and advisor. We currently do not maintain key person insurance on these individuals. The loss of one or more members of our management team or other key employees or advisors could delay our research and development programs and have a material and adverse effect on our business, financial condition, results of operations and prospects. The relationships that our key managers have cultivated within our industry make us particularly dependent upon their continued employment with us. We are dependent on the continued service of our technical personnel, in particular, personnel involved with crystallization of integrins, because of the highly technical nature of our product candidates and technologies related to our

MInT Platform, and the specialized nature of the regulatory approval process. Because our management team and key employees are not obligated to provide us with continued service, they could terminate their employment with us at any time without penalty.

We conduct our operations at our facility in Waltham, Massachusetts. This region is headquarters to many other biopharmaceutical companies and many academic and research institutions. Competition for skilled personnel in our market is intense and may limit our ability to hire and retain highly qualified personnel on acceptable terms or at all. We also face competition for personnel from other companies, universities, public and private research institutions, government entities and other organizations. Our future success will depend in large part on our continued ability to attract and retain other highly qualified scientific, technical and management personnel, as well as personnel with expertise in clinical testing, manufacturing, governmental regulation and commercialization. If we are unable to continue to attract and retain high-quality personnel, the rate and success at which we can discover and develop product candidates will be limited which could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Our future growth may depend, in part, on our ability to operate in foreign markets, where we would be subject to additional regulatory burdens and other risks and uncertainties.

Our future growth may depend, in part, on our ability to develop and commercialize our product candidates in foreign markets for which we may rely on collaboration with third parties. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from the applicable regulatory authority in that foreign market, and may never receive such regulatory approval for any of our product candidates. To obtain separate regulatory approval in many other countries, we must comply with numerous and varying regulatory requirements of such countries regarding safety and efficacy and governing, among other things, clinical trials and commercial sales, pricing and distribution of our product candidates, and we cannot predict success in these jurisdictions. If we fail to comply with the regulatory requirements in international markets and receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed and our business will be adversely affected. We may not obtain foreign regulatory approvals on a timely basis, if at all. Our failure to obtain approval of any of our product candidates by regulatory authorities in another country may significantly diminish the commercial prospects of that product candidate and our business, financial condition, results of operations and prospects could be materially and adversely affected. Moreover, even if we obtain approval of our product candidates and ultimately commercialize our product candidates in foreign markets, we would be subject to the risks and uncertainties, including the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements and reduced protection of intellectual property rights in some foreign countries.

Our business entails a significant risk of product liability and our ability to obtain sufficient insurance coverage could have a material and adverse effect on our business, financial condition, results of operations and prospects.

When we conduct clinical trials of our product candidates, we may be exposed to significant product liability risks inherent in the development, testing, manufacturing and marketing of therapeutic treatments. Product liability claims could delay or prevent completion of our development programs. If we succeed in marketing products, such claims could result in an FDA investigation of the safety and effectiveness of our products, our manufacturing processes and facilities or our marketing programs and potentially a recall of our products or more serious enforcement action, limitations on the approved indications for which they may be used or suspension or withdrawal of approvals. Regardless of the merits or eventual outcome, liability claims may also result in decreased demand for our products, termination of clinical trial sites or entire trial programs, withdrawal of clinical trial participants, injury to our reputation and significant negative media attention, significant costs to defend the related litigation, a diversion of management's time and our resources from our business operations, substantial monetary awards to trial participants or patients, loss of

revenue, the inability to commercialize and products that we may develop, and a decline in our stock price. We currently maintain general liability insurance with coverage up to $10.0 million. We may, however, need to obtain higher levels of product liability insurance for later stages of clinical development or marketing any of our product candidates. Any insurance we have or may obtain may not provide sufficient coverage against potential liabilities. Furthermore, clinical trial and product liability insurance is becoming increasingly expensive. As a result, we may be unable to obtain sufficient insurance at a reasonable cost to protect us against losses caused by product liability claims that could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Our employees, independent contractors, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

We are exposed to the risk of employee fraud or other illegal activity by our employees, independent contractors, consultants, commercial partners and vendors. Misconduct by these parties could include intentional, reckless and/or negligent conduct that fails to comply with FDA regulations, provide true, complete and accurate information to the FDA and other similar foreign regulatory bodies, comply with manufacturing standards we may establish, comply with healthcare fraud and abuse laws and regulations, report financial information or data accurately or disclose unauthorized activities to us. If we obtain FDA approval of any of our product candidates and begin commercializing those products in the United States, our potential exposure under these laws will increase significantly, and our costs associated with compliance with these laws are likely to increase. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. Additionally, we are subject to the risk that a person could allege such fraud or other misconduct, even if none occurred. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a material and adverse effect on our business, financial condition, results of operations and prospects, including the imposition of significant civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, the curtailment or restructuring of our operations, loss of eligibility to obtain approvals from the FDA, exclusion from participation in government contracting, healthcare reimbursement or other government programs, including Medicare and Medicaid, integrity oversight and reporting obligations, or reputational harm.

We depend on our information technology systems, and any failure of these systems, or those of our CROs or other contractors or consultants we may utilize, could harm our business. Security breaches, cyber-attacks, loss of data, and other disruptions could compromise sensitive information related to our business or prevent us from accessing critical information and expose us to liability, which could adversely affect our business, results of operations, financial condition and prospects.

We collect and maintain information in digital form that is necessary to conduct our business, and we are increasingly dependent on information technology systems and infrastructure to operate our business. In the ordinary course of our business, we collect, store and transmit large amounts of confidential information, including intellectual property, proprietary business information and personal data. It is critical that we do so in a secure manner to maintain the confidentiality and integrity of such confidential information. We have established physical, electronic and organizational measures to safeguard and secure our systems to prevent a data compromise, and rely on commercially available systems, software, tools, and monitoring to

provide security for our information technology systems and the processing, transmission and storage of digital information. We have also outsourced elements of our information technology infrastructure, and as a result a number of third-party vendors may or could have access to our confidential information. Our internal information technology systems and infrastructure, and those of our current and any future collaborators, contractors and consultants and other third parties on which we rely, are vulnerable to damage from cyber incidents such as third parties getting access to employee accounts using stolen or inferred credentials, computer viruses, phishing attacks, spamming, malware, cyber-attacks or cyber-intrusions over the Internet, attachments to emails, persons inside our organization, or persons with access to systems inside our organization, and attempts to gain unauthorized access to computer systems and networks. Our internal information technology systems and infrastructure is also vulnerable to damage from natural disasters, terrorism, war, telecommunication and electrical failures.

The risk of a security breach or disruption or data loss, particularly through cyber-attacks or cyber intrusion, including by computer hackers, foreign governments and cyber terrorists, has generally increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. In addition, the prevalent use of mobile devices that access confidential information increases the risk of data security breaches, which could lead to the loss of confidential information or other intellectual property. The costs to us to mitigate network security problems, bugs, viruses, worms, malicious software programs and security vulnerabilities could be significant, and while we have implemented security measures to protect our data security and information technology systems, our efforts to address these problems may not be successful, and these problems could result in unexpected interruptions, delays, cessation of service and other harm to our business and our competitive position. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our product development programs. For example, the loss of clinical trial data from completed or ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Moreover, if a computer security breach affects our systems or results in the unauthorized release of personally identifiable information, our reputation could be materially damaged. In addition, such a breach may require notification to governmental agencies, the media or individuals pursuant to various federal and state privacy and security laws, if applicable, including the Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and its implementing rules and regulations, as well as regulations promulgated by the Federal Trade Commission and state breach notification laws. In addition, such cyber-attacks, data breaches or destruction or loss of data could result in violation of applicable international privacy, data protection and other laws, resulting in exposure to material civil and/or criminal liability. Further, our general liability insurance and corporate risk program may not cover all potential claims to which we are exposed and may not be adequate to indemnify us for all liability that maybe imposed; and could materially adversely affect our business, results of operations, financial condition and prospects. For example, the loss of clinical trial data from completed or ongoing clinical trials for any of our product candidates could result in delays in our development and regulatory approval efforts and significantly increase our costs to recover or reproduce the data. In addition, we may suffer reputational harm or face litigation or adverse regulatory action as a result of cyber-attacks or other data security breaches and may incur significant additional expense to implement further data protection measures.

If we do not comply with laws regulating the protection of the environment and health and human safety, our business could be affected adversely.

Our research and development involves the use of hazardous chemicals and materials, including radioactive materials. We maintain quantities of various flammable and toxic chemicals in our facilities in Waltham, Massachusetts that are required for our research and development activities. We are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous chemicals and materials. We believe our procedures for storing, handling and disposing these materials in our facilities comply with the relevant guidelines of Middlesex County, Massachusetts. Although

we believe that our safety procedures for handling and disposing of these materials comply with the standards mandated by applicable regulations, the risk of accidental contamination or injury from these materials cannot be eliminated. If an accident occurs, we could be held liable for resulting damages, which could be substantial. We are also subject to numerous environmental, health and workplace safety laws and regulations, including those governing laboratory procedures, exposure to blood-borne pathogens and the handling of animals and biohazardous materials. Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of these materials, this insurance may not provide adequate coverage against potential liabilities. We may incur substantial costs to comply with, and substantial fines or penalties if we violate, any of these laws or regulations.

Our current operations concentrated in one location, and we or the third parties upon whom we depend may be adversely affected by a heavy snow storm or other natural disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Our current operations are located in our facilities in Waltham, Massachusetts. Any unplanned event, such as flood, fire, explosion, earthquake, extreme weather condition, medical epidemic, power shortage, telecommunication failure or other natural or manmade accidents or incidents that result in us being unable to fully utilize our facilities, or the manufacturing facilities of our third-party contract manufacturers, may have a material and adverse effect on our ability to operate our business, particularly on a daily basis, and have significant negative consequences on our financial and operating conditions. For example, our operations are concentrated primarily on the east coast of the United States, and any adverse weather event or natural disaster, such as a hurricane or heavy snow storm, could have a material adverse effect on a substantial portion of our operations. Loss of access to these facilities may result in increased costs, delays in the development of our product candidates or interruption of our business operations. Extreme weather conditions or other natural disasters could further disrupt our operations, and have a material and adverse effect on our business, financial condition, results of operations and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as our research facilities or the manufacturing facilities of our third-party contract manufacturers, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible, for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place may prove inadequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business. As part of our risk management policy, we maintain insurance coverage at levels that we believe are appropriate for our business. However, in the event of an accident or incident at these facilities, we cannot assure you that the amounts of insurance will be sufficient to satisfy any damages and losses. If our facilities, or the manufacturing facilities of our third-party contract manufacturers, are unable to operate because of an accident or incident or for any other reason, even for a short period of time, any or all of our research and development programs may be harmed. Any business interruption could have a material and adverse effect on our business, financial condition, results of operations and prospects.

We are subject to complex tax rules relating to our business, and any audits, investigations or tax proceedings could have a material adverse effect on our business, results of operations and financial condition.

We are subject to income and non-income taxes in the United States. Income tax accounting often involves complex issues, and judgment is required in determining our provision for income taxes and other tax liabilities. We may operate in other non-United States jurisdictions in the future. We could become subject to income and non-income taxes in non-United States jurisdictions as well. In addition, many jurisdictions have detailed transfer pricing rules, which require that all transactions with non-resident related parties be priced using arm's length pricing principles within the meaning of such rules. The application of

withholding tax, goods and services tax, sales taxes and other non-income taxes is not always clear and we may be subject to tax audits relating to such withholding or non-income taxes. We believe that our tax positions are reasonable. We are currently not subject to any tax audits. However, the Internal Revenue Service or other taxing authorities may disagree with our positions. If the Internal Revenue Service or any other tax authorities were successful in challenging our positions, we may be liable for additional tax and penalties and interest related thereto or other taxes, as applicable, in excess of any reserves established therefor, which may have a significant impact on our results and operations and future cash flow.

Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2018, we had net operating loss carryforwards for federal and state income tax purposes of $34.7 million and $21.4 million, respectively, which begin to expire in 2036. As of December 31, 2018, we also had available tax credit carryforwards for federal and state income tax purposes of $0.6 million and $0.4 million, respectively, which begin to expire in 2031. To the extent that our taxable income exceeds any current year operating losses, we plan to use our carryforwards to offset income that would otherwise be taxable. However, utilization of carryforwards generated in tax years beginning after December 31, 2017 are limited to a maximum of 80% of the taxable income for such year determined without regard to such carryforwards. In addition, under Section 382 of the Code, changes in our ownership may limit the amount of our net operating loss carryforwards and tax credit carryforwards that could be utilized annually to offset our future taxable income, if any. This limitation would generally apply in the event of a cumulative change in ownership of our company of more than 50% within a three-year period. We have not performed an analysis to determine whether there has been an ownership change pursuant to Section 382. Any such limitation may significantly reduce our ability to utilize our net operating loss carryforwards and tax credit carryforwards before they expire. Private placements and other transactions that have occurred since our inception, as well as our initial public offering, may trigger such an ownership change pursuant to Section 382. Any such limitation, whether as the result of our initial public offering, prior private placements, sales of our common stock by our existing stockholders or additional sales of our common stock by us, could have a material adverse effect on our results of operations in future years. Under the Tax Cuts and Jobs Act of 2017, net operating losses generated after December 31, 2017 will not be subject to expiration.

Risks Related to Intellectual Property

If we are not able to obtain, maintain, and enforce patent protection for our technologies or product candidates, development and commercialization of our product candidates may be adversely affected.

Our success depends in part on our ability to obtain and maintain patents and other forms of intellectual property rights, including in-licenses of intellectual property rights of others, for our product candidates, as well as our ability to preserve our trade secrets, to prevent third parties from infringing upon our proprietary rights and to operate without infringing upon the proprietary rights of others. As of March 31, 2019, we solely owned four published pending patent applications and six unpublished pending patent applications; and, under an exclusive, worldwide license agreement with the Children's Medical Center Corporation, or the CMCC Agreement, we licensed one U.S. patent and one pending U.S. divisional patent application with claims relating to modified integrin polypeptides and modified integrin polypeptide dimers. We may not be able to apply for patents on certain aspects of our product candidates in a timely fashion or at all. Further, we may not be able to prosecute all necessary or desirable patent applications, or maintain, enforce and license any patents that may issue from such patent applications, at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. We may not have the right to control the preparation, filing and prosecution of all patent applications that we license from third parties, or to maintain the rights to patents licensed to third parties. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. Future patents we obtain may not be sufficiently broad to prevent others from using our technology or from developing competing products

and technology. There is no guarantee that any of our pending patent applications will result in issued or granted patents, that any of our future issued or granted patents will not later be found to be invalid or unenforceable or that any future issued or granted patents will include claims that are sufficiently broad to cover our product candidates or to provide meaningful protection from our competitors. Moreover, the patent position of biotechnology and biopharmaceutical companies can be highly uncertain because it involves complex legal and factual questions. We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our current and future proprietary technology and product candidates are covered by valid and enforceable patents, or are effectively maintained as trade secrets. If third parties disclose or misappropriate our proprietary rights, it may materially and adversely affect our position in the market.

Our pending patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications. Assuming the other requirements for patentability are met, currently, the first to file a patent application is generally entitled to the patent. However, prior to March 16, 2013, in the United States, the first to invent was entitled to the patent. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain that we were the first to make the inventions claimed in our patents or pending patent applications, or that we were the first to file for patent protection of such inventions.

The U.S. Patent and Trademark Office, or USPTO, and various foreign governmental patent agencies require compliance with a large number of procedural, documentary, fee payment and other provisions during the patent process. There are situations in which noncompliance can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, competitors might be able to enter the market earlier than would otherwise have been the case. The standards applied by the USPTO and foreign patent offices in granting patents are not always applied uniformly or predictably. For example, there is no uniform worldwide policy regarding patentable subject matter or the scope of claims allowable in biotechnology and biopharmaceutical patents. As such, we do not know the degree of future protection that we will have on our proprietary products and technology. The process of obtaining patents is time consuming, expensive and sometimes unpredictable.

Once granted, for a given period after allowance or grant patents may remain open to opposition, interference, re-examination, post-grant review, *inter partes* review, nullification, or derivation action in court or before patent offices or similar proceedings, during which time third parties can raise objections against such initial grant. Such proceedings may continue for a protracted period of time and an adverse determination in any such proceedings could reduce the scope of the allowed or granted claims thus attacked, or could result in our patents being invalidated in whole or in part, or being held unenforceable, which could allow third parties to commercialize our product candidates and compete directly with us without payment to us. In addition, there can be no assurance that:

- § others will not or may not be able to make, use or sell compounds that are the same as or similar to our product candidates but that are not covered by the claims of the patents that we own or license;
- § we or our licensors, or our existing or future collaborators are the first to make the inventions covered by each of our issued patents and pending patent applications that we own or license;
- § we or our licensors, or our existing or future collaborators are the first to file patent applications covering certain aspects of our inventions;
- § others will not independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- § a third party may not challenge our patents and, if challenged, a court would hold that our patents are valid, enforceable and infringed;
- § any issued patents that we own or have licensed or that we may license in the future will provide us with any competitive advantages, or will not be challenged by third parties;
- § we may develop additional proprietary technologies that are patentable;

- the patents of others will not have a material or adverse effect on our business, financial condition, results of operations and prospects; and
- our competitors do not conduct research and development activities in countries where we do not have enforceable patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets.

If we or our licensors or collaborators fail to maintain the patents and patent applications covering our product candidates, our competitors might be able to enter the market, which could have a material and adverse effect on our business, financial condition, results of operations and prospects. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, regardless of the outcome, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patent protection for certain aspects of our product candidates, we also consider trade secrets, including confidential and unpatented know-how, important to the maintenance of our competitive position. Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed. We seek to protect trade secrets and confidential and unpatented know-how, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to such knowledge, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants that obligate them to maintain confidentiality and assign their inventions to us. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time- consuming, and the outcome is unpredictable. In addition, some courts in the United States and certain foreign jurisdictions are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our competitive position would be harmed which could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Other companies or organizations may challenge our or our licensors' patent rights or may assert patent rights that prevent us from developing and commercializing our products.

Oral integrin therapies in fibrosis and inflammatory bowel disease or other disease areas are a relatively new scientific field. We have applied for, and have obtained a license from a third party on an exclusive basis to U.S. patents related to our MInT Platform. Other pending patent applications in the United States and in key markets around the world that we own or license claim many different methods, compositions and processes relating to the discovery, development, and manufacture of small-molecule integrin inhibitor-based and other therapeutics.

As the field of small-molecule integrin inhibitor-based therapeutics continues to mature, patent applications are being processed by national patent offices around the world. There is uncertainty about which patents will issue and, if they do, as to when, to whom, and with what claims. In addition, third parties may attempt to invalidate our intellectual property rights. Even if our rights are not directly challenged, disputes could lead to the weakening of our intellectual property rights. Our defense against any attempt by third parties to circumvent or invalidate our intellectual property rights could be costly to us, could require significant time and attention of our management and could have a material and adverse effect on our business, financial condition, results of operations and prospects or our ability to successfully compete. If

we are found to infringe a third party's intellectual property rights, we could be forced, including by court order, to cease developing, manufacturing or commercializing the infringing product candidate or product.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting, defending and enforcing patents covering our technology in the United States and in other jurisdictions worldwide would be extremely costly, and our or our licensors' or collaborators' intellectual property rights may not exist in some countries outside the United States or may be less extensive in some countries than in the United States. In jurisdictions where we or our licensors or collaborators have not obtained patent protection, competitors may seek to use our or our licensors' or collaborators' technology to develop competing products and further, may export otherwise infringing products to territories where we have patent protection, but where it is more difficult to enforce a patent as compared to the United States. Competitor products may compete with our future products in jurisdictions where we do not have issued or granted patents or where our or our licensors' or collaborators' issued or granted patent claims or other intellectual property rights are not sufficient to prevent competitor activities in these jurisdictions. The legal systems of certain countries, particularly certain developing countries, make it difficult to enforce patents and such countries may not recognize other types of intellectual property protection, particularly relating to pharmaceuticals or biopharmaceuticals. This could make it difficult for us or our licensors or collaborators to prevent the infringement of our or their patents or marketing of competing products in violation of our or their proprietary rights generally in certain jurisdictions. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our and our licensors' or collaborators' efforts and attention from other aspects of our business, could put our and our licensors' or collaborators' patents at risk of being invalidated or interpreted narrowly and our and our licensors' or collaborators' patent applications at risk of not issuing and could provoke third parties to assert claims against us or our licensors or collaborators. We or our licensors or collaborators may not prevail in any lawsuits that we or our licensors or collaborators initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful.

When we elect to pursue patent protection on an invention, we generally first file a U.S. provisional patent application (a priority filing) at the USPTO. An international patent application under the Patent Cooperation Treaty, or PCT, is then usually filed within twelve months after the priority filing. Based on the PCT filing, national and regional patent applications may be filed in the United States, the European Patent Office and, depending on the individual case, also in any or all of, *inter alia*, Australia, Brazil, Canada, China, Hong Kong, India, Israel, Japan, Mexico, New Zealand, Russia, South Africa, South Korea and many other jurisdictions. We have thus far not filed for patent protection in all national and regional jurisdictions where such protection may be available. In addition, we may decide to abandon national and regional patent applications before grant. Finally, the grant proceeding of each national or regional patent office is an independent proceeding which may lead to situations in which applications might in some jurisdictions be refused by the relevant registration authorities, while granted by others. It is also quite common that, depending on the country, various scopes of patent protection may be granted on the same product candidate or technology.

The laws of some jurisdictions do not protect intellectual property rights to the same extent as the laws in the United States, and many companies have encountered significant difficulties in protecting and defending such rights in such jurisdictions. If we or our licensors or collaborators encounter difficulties in protecting, or are otherwise precluded from effectively protecting, the intellectual property rights important for our business in such jurisdictions, the value of these rights may be diminished and we may face additional competition from others in those jurisdictions. Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such a patent. If we or any of our licensors or collaborators are forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position in the relevant jurisdiction may be

impaired and our business, financial condition, results of operations and prospects may be adversely affected.

If we fail to comply with our obligations under any license, collaboration or other agreements, we may be required to pay damages and could lose intellectual property rights that are necessary for developing and protecting our product candidates or we could lose certain rights to grant sublicenses.

We are dependent on patents, know-how and proprietary technology, both our own and licensed from others. Any termination of these licenses could result in the loss of significant rights and could harm our ability to develop our product candidates. Our current licenses impose, and any future licenses we enter into are likely to impose, various development, commercialization, funding, milestone, royalty, diligence, sublicensing, insurance, patent prosecution and enforcement and/or other obligations on us. If we breach any of these obligations, or use the intellectual property licensed to us in an unauthorized manner, we may be required to pay damages and the licensor may have the right to terminate the license, which could result in us being unable to develop, manufacture and sell any future products that are covered by the licensed technology or enable a competitor to gain access to the licensed technology. Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing or otherwise violating a licensor's rights. In addition, while we cannot determine currently the amount of the royalty obligations we would be required to pay on sales of future products, if any, the amounts may be significant. The amount of our future royalty obligations will depend on the technology and intellectual property we use in products that we successfully develop and commercialize, if any. Therefore, even if we successfully develop and commercialize products, we may be unable to achieve or maintain profitability.

Moreover, disputes may arise regarding intellectual property subject to a licensing agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the extent to which our product candidates, technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under our collaborative development relationships;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the inventorship and ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

In addition, the agreements under which we currently license intellectual property or technology from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations, and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates, which could have a material adverse effect on our business, financial conditions, results of operations, and prospects.

We, our licensors or collaborators, or any future strategic partners may need to resort to litigation to protect or enforce our patents, if and when granted, or other proprietary rights, all of which could be costly, time consuming, delay or prevent the development and commercialization of our product candidates, or put our patents, if and when granted, and other proprietary rights at risk.

Competitors may infringe our patents, if and when granted, or other intellectual property. If we were to initiate legal proceedings against a third party to enforce a patent covering one of our products or our

technology, the defendant could counterclaim that our patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, for example, lack of novelty, lack of adequate written description, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that an individual connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. The outcome following legal assertions of invalidity or unenforceability during patent litigation is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on one or more of our products or certain aspects of our platform technology. Such a loss of patent protection could have a material and adverse effect on our business, financial condition, results of operations and prospects. Interference or derivation proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the inventorship or priority of inventions with respect to our patents or patent applications. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms or at all, or if a non-exclusive license is offered and our competitors gain access to the same technology. In addition, the uncertainties associated with litigation could have a material adverse effect on our ability to raise the funds necessary to continue our clinical trials, continue our research programs, license necessary technology from third parties, or enter into development partnerships that would help us bring our product candidates to market. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions, or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock. Patents and other intellectual property rights will not protect our technology if competitors design around our protected technology without legally infringing our patents or other intellectual property rights.

Intellectual property rights of third parties could adversely affect our ability to commercialize our product candidates, and we, our licensors or collaborators, or any future strategic partners may become subject to third party claims or litigation alleging infringement of patents or other proprietary rights or seeking to invalidate patents or other proprietary rights. We might be required to litigate or obtain licenses from third parties in order to develop or market our product candidates. Such litigation or licenses could be costly or not available on commercially reasonable terms.

We, our licensors or collaborators, or any future strategic partners, may be subject to third-party claims for infringement or misappropriation of patent or other proprietary rights. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, derivations, oppositions and *inter partes* review proceedings before the USPTO, and corresponding foreign patent offices. There may be issued patents and pending patent applications that claim aspects of our targets, our MInT Platform, or our product candidates and modifications that we may need to apply to our product candidates. There may be issued patents that claim integrin inhibitors which may be relevant to the products we wish to develop. Thus, it is possible that one or more organizations will hold patent rights to which we will need a license. If those organizations refuse to grant us a license to such patent rights on reasonable terms, we may not be able to market products or perform research and development or other activities covered by these patents, which could have a material and adverse effect on our business, financial condition, results of operations and prospects. If we, our licensors or collaborators, or any future strategic partners are found to infringe a third-party patent or other intellectual property rights, we could be required to pay damages, potentially including treble damages and attorneys' fees if we or they are found to

have infringed willfully. In addition, we, our licensors or collaborators, or any future strategic partners may choose to seek, or be required to seek, a license from a third party, which may not be available on acceptable terms, if at all. Even if a license can be obtained on acceptable terms, the rights may be non-exclusive, which could give our competitors access to the same technology or intellectual property rights licensed to us. If we fail to obtain a required license, we or our existing or future collaborators may be unable to effectively market product candidates based on our technology, which could limit our ability to generate revenue or achieve profitability and possibly prevent us from generating revenue sufficient to sustain our operations. In addition, we may find it necessary to pursue claims or initiate lawsuits to protect or enforce our patent or other intellectual property rights. The cost to us in defending or initiating any litigation or other proceeding relating to patent or other proprietary rights, even if resolved in our favor, could be substantial, and litigation could divert our management's attention. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could delay our research and development efforts and limit our ability to continue our operations.

Because the integrin-based therapeutics landscape is still evolving, it is difficult to conclusively assess our freedom to operate without infringing on third-party rights. There are numerous companies that have pending patent applications and issued patents broadly covering integrins generally, covering integrins directed against the same targets as, or targets similar to, those we are pursuing, or covering compounds similar to our product candidates. Failure to receive a license could delay commercialization of our product candidates. Our competitive position may suffer if patents issued to third parties or other third-party intellectual property rights cover our products or product candidates or elements thereof, or our manufacture or uses relevant to our development plans. In such cases, we may not be in a position to develop or commercialize products or product candidates until such patents expire or unless we successfully pursue litigation to nullify or invalidate the third-party intellectual property right concerned, or enter into a license agreement with the intellectual property right holder, if available on commercially reasonable terms. There may be issued patents of which we are not aware, held by third parties that, if found to be valid and enforceable, could be alleged to be infringed by our MInT Platform and product candidates. There also may be pending patent applications of which we are not aware that may result in issued patents, which could be alleged to be infringed by our MInT Platform and product candidates. If such an infringement claim should be brought and be successful, we may be required to pay substantial damages, including potentially treble damages and attorneys' fees for willful infringement, and we may be forced to abandon our product candidates or seek a license from any patent holders. No assurances can be given that a license will be available on commercially reasonable terms, if at all.

It is also possible that we have failed to identify relevant third-party patents or applications. For example, U.S. applications filed before November 29, 2000, and certain U.S. applications filed after that date that will not be filed outside the United States remain confidential unless and until corresponding patents issue. Patent applications in the United States and elsewhere are published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Therefore, patent applications covering our products or MInT Platform could have been filed by others without our knowledge. Additionally, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our MInT Platform, our products or the use of our products. Third-party intellectual property right holders may also actively bring infringement claims against us. We cannot guarantee that we will be able to successfully settle or otherwise resolve such infringement claims. If we are unable to successfully settle future claims on terms acceptable to us, we may be required to engage in or continue costly, unpredictable and time-consuming litigation and may be prevented from or experience substantial delays in marketing our products. Parties making claims against us may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or administrative proceedings, there is a

risk that some of our confidential information could be compromised by disclosure. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have material adverse effect on our ability to raise additional funds or otherwise have a material adverse effect on our business, results of operations, financial condition and prospects. If we fail in any such dispute, in addition to being forced to pay damages, we may be temporarily or permanently prohibited from commercializing any of our product candidates that are held to be infringing. We might, if possible, also be forced to redesign product candidates so that we no longer infringe the third-party intellectual property rights. Any of these events, even if we were ultimately to prevail, could require us to divert substantial financial and management resources that we would otherwise be able to devote to our business and could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Litigation and other legal proceedings relating to intellectual property claims, with or without merit, are unpredictable and generally expensive and time consuming and are likely to divert significant resources from our core business, including distracting our technical and management personnel from their normal responsibilities. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Moreover, such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities.

We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating or from successfully challenging our intellectual property rights. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

We may be subject to claims that we or our employees or consultants have wrongfully used or disclosed alleged trade secrets of our employees' or consultants' former employers or their clients. These claims may be costly to defend and if we do not successfully do so, we may be required to pay monetary damages and may lose valuable intellectual property rights or personnel.

Many of our employees, including our management, were previously employed at universities or biotechnology or biopharmaceutical companies, including our competitors or potential competitors. Some of these employees executed proprietary rights, non-disclosure and non-competition agreements in connection with such previous employment. Although no claims against us are currently pending, we may be subject to claims that these employees or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. A loss of key research personnel or their work product could hamper our ability to develop and ultimately commercialize, or prevent us from developing and commercializing, our product candidates, which could severely harm our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

Patent terms may be insufficient to protect our competitive position on our product candidates for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various patent term adjustments or extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired, we may be open to competition from competitive products, including generics or biosimilars. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the USPTO and various governmental patent agencies outside of the United States in several stages over the lifetime of the patents and/or applications. We have systems in place to remind us to pay these fees, and we employ an outside firm and/or rely on our outside counsel to pay these fees due to the USPTO and non-U.S. patent agencies. The USPTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to enter the market and this circumstance would have a material adverse effect on our business.

Changes in U.S. patent and ex-U.S. patent laws could diminish the value of patents in general, thereby impairing our ability to protect our products.

Changes in either the patent laws or interpretation of the patent laws in the United States or in other jurisdictions could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. In the United States, numerous recent changes to the patent laws and proposed changes to the rules of the USPTO may have a significant impact on our ability to protect our technology and enforce our intellectual property rights. For example, the America Invents Act, enacted within the last several years, involves significant changes in patent legislation. The U.S. Supreme Court has ruled on several patent cases in recent years, some of which cases either narrow the scope of patent protection available in certain circumstances or weaken the rights of patent owners in certain situations. For example, the decision by the *U.S. Supreme Court in Association for Molecular Pathology v. Myriad Genetics, Inc.* precludes a claim to a nucleic acid having a stated nucleotide sequence that is identical to a sequence found in nature and unmodified. We currently are not aware of an immediate impact of this decision on our patent applications because we are developing product candidates that we believe are not found in nature. However, this decision continues to be interpreted by courts and by the USPTO. We cannot assure you that the interpretations of this decision or subsequent rulings will not adversely impact our patents or patent applications. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once granted. Depending on decisions by the U.S. Congress, the federal courts and the USPTO, and similar legislative and regulatory bodies in other countries in which may pursue patent protection, the laws and regulations governing patents could change in unpredictable ways, particularly with respect to pharmaceutical patent protection, that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

Our common law trademarks or trade names may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. If we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively which could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Risks Related to Government Regulation

We and/or our collaborators may be unable to obtain, or may be delayed in obtaining, U.S. or foreign regulatory approval and, as a result, unable to commercialize our product candidates.

Our product candidates are subject to extensive governmental regulations relating to, among other things, research, testing, development, manufacturing, approval, recordkeeping, reporting, labeling, storage, packaging, advertising and promotion, pricing, post-approval monitoring, marketing and distribution of drugs. Rigorous preclinical testing and clinical trials and an extensive regulatory approval process are required to be completed successfully in the United States and in many foreign jurisdictions before a new drug can be marketed. Satisfaction of these and other regulatory requirements is costly, time consuming, uncertain and subject to unanticipated delays. It is possible that none of the product candidates we may develop, either alone or with our collaborators, will obtain the regulatory approvals necessary for us or our existing or future collaborators to begin selling them.

We have no prior experience in conducting and managing the clinical trials necessary to obtain regulatory approvals, including approval by the FDA. The time required to obtain FDA and other approvals is unpredictable but typically takes many years following the commencement of clinical trials, depending upon the type, complexity and novelty of the product candidate. The standards that the FDA and its foreign counterparts use when regulating us require judgment and can change, which makes it difficult to predict with certainty their application. Any analysis we perform of data from preclinical and clinical activities is subject to confirmation and interpretation by regulatory authorities, which could delay, limit or prevent regulatory approval. We or our collaborators may also encounter unexpected delays or increased costs due to new government regulations, for example, from future legislation or administrative action, or from changes in FDA policy during the period of product development, clinical trials and FDA regulatory review. It is impossible to predict whether legislative changes will be enacted, or whether FDA or foreign regulations, guidance or interpretations will be changed, or the impact of such changes, if any.

Given that the product candidates we are developing, either alone or with our collaborators, represent a new therapeutic approach, the FDA and its foreign counterparts may not have established any definitive policies, practices or guidelines in relation to these product candidates. Moreover, the FDA may respond to any NDA that we may submit by defining requirements that we do not anticipate. Such responses could delay clinical development of our product candidates. In addition, because there may be approved treatments for some of the diseases for which we may seek approval, in order to receive regulatory approval, we may need to demonstrate through clinical trials that the product candidates we develop to treat these diseases, if any, are not only safe and effective, but safer or more effective than existing products. Furthermore, in recent years, there has been increased public and political pressure on the FDA with respect to the approval process for new drugs, and FDA standards, especially regarding product safety.

Any delay or failure in obtaining required approvals could have a material and adverse effect on our ability to generate revenues from the particular product candidate for which we are seeking approval. Furthermore, any regulatory approval to market a product may be subject to limitations on the approved uses for which we may market the product or on the labeling or other restrictions.

We are also subject to or may in the future become subject to numerous foreign regulatory requirements governing, among other things, the conduct of clinical trials, manufacturing and marketing authorization, pricing and third-party reimbursement. The foreign regulatory approval process varies among countries and may include all of the risks associated with the FDA approval process described above, as well as risks attributable to the satisfaction of local regulations in foreign jurisdictions. Moreover, the time required to obtain approval may differ from that required to obtain FDA approval. FDA approval does not ensure approval by regulatory authorities outside the United States and vice versa. Any delay or failure to obtain U.S. or foreign regulatory approval for a product candidate could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Even if we receive regulatory approval for any of our product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal. We may also be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.

Any regulatory approvals that we or our existing or future collaborators obtain for our product candidates may also be subject to limitations on the approved indicated uses for which a product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing and surveillance to monitor the safety and efficacy of the product candidate.

In addition, if the FDA or a comparable foreign regulatory authority approves any of our product candidates, the manufacturing processes, labeling, packaging, distribution, post-approval monitoring and adverse event reporting, storage, import, export, advertising, promotion and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. The FDA has significant post-market authority, including the authority to require labeling changes based on new safety information and to require post-market studies or clinical trials to evaluate safety risks related to the use of a product or to require withdrawal of the product from the market. The FDA also has the authority to require a REMS plan after approval, which may impose further requirements or restrictions on the distribution or use of an approved drug. The manufacturing facilities we use to make a future product, if any, will also be subject to periodic review and inspection by the FDA and other regulatory agencies, including for continued compliance with cGMP requirements. The discovery of any new or previously unknown problems with our third-party manufacturers, manufacturing processes or facilities may result in restrictions on the product, manufacturer or facility, including withdrawal of the product from the market. If we rely on third-party manufacturers, we will not have control over compliance with applicable rules and regulations by such manufacturers. Any product promotion and advertising will also be subject to regulatory requirements and continuing regulatory review. The FDA imposes stringent restrictions on manufacturers' communications regarding use of their products. If we promote our product candidates in a manner inconsistent with FDA-approved labeling or otherwise not in compliance with FDA regulations, we may be subject to enforcement action. If we or our existing or future collaborators, manufacturers or service providers fail to comply with applicable continuing regulatory requirements in the United States or foreign jurisdictions in which we seek to market our products, we or they may be subject to, among other things, fines, warning letters, holds on clinical trials, delay of approval or refusal by the FDA or similar foreign regulatory bodies to approve pending applications or supplements to approved applications, suspension or withdrawal of regulatory approval, product recalls and seizures, administrative detention of products, refusal to permit the import or export of products, operating restrictions, injunction, civil penalties and criminal prosecution.

Subsequent discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- § restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market or voluntary or mandatory product recalls;

- fines, warning or untitled letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or our strategic partners;
- suspension or revocation of product license approvals;
- product seizure or detention or refusal to permit the import or export of products; and
- injunctions or the imposition of civil or criminal penalties.

The FDA policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. For example, in December 2016, the 21st Century Cures Act, or Cures Act, was signed into law. The Cures Act, among other things, is intended to modernize the regulation of drugs and biologics and to spur innovation. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business.

We also cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative or executive action, either in the United States or abroad. For example, certain policies of the current U.S. presidential administration may impact our business and industry. Namely, the current U.S. presidential administration has taken several executive actions, including the issuance of a number of executive orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine regulatory and oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. Changes in FDA staffing could result in delays in the FDA's responsiveness or in its ability to review submissions or applications, issue regulations or guidance, or implement or enforce regulatory requirements in a timely fashion or at all. Similar consequences would also result in the event of another significant shutdown of the federal government such as the one that occurred from December 22, 2018 through January 25, 2019. It is difficult to predict how these requirements will be implemented, and the extent to which they will impact the FDA's ability to exercise its regulatory authority. If these executive actions impose constraints on the FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted.

We may face difficulties from healthcare legislative reform measures.

Existing regulatory policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

In the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Healthcare and Education Reconciliation Act, or together, the ACA, was enacted, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The ACA, among other things, (i) subjected therapeutic biologics to potential competition by lower-cost biosimilars by creating a licensure framework for follow on biologic products, (ii) proscribed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs and therapeutic biologics that are inhaled, infused, instilled, implanted or injected, (iii) increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations, (iv) established annual non deductible fees and taxes on manufacturers of

certain branded prescription drugs and therapeutic biologics apportioned among these entities according to their market share in certain government healthcare programs, (v) established a new Medicare Part D coverage gap discount program, in which manufacturers must now agree to offer 70% point-of-sale discounts off negotiated prices of applicable brand drugs and therapeutic biologics to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs and therapeutic biologics to be covered under Medicare Part D, (vi) expanded eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability, (vii) expanded the entities eligible for discounts under the Public Health program (viii) created a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research and (ix) established a Center for Medicare Innovation at the Centers for Medicare & Medicaid Services, or CMS, to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

The current U.S. presidential administration and U.S. Congress have sought, and we expect they will continue to, seek to modify, repeal, or otherwise invalidate all, or certain provisions of, the ACA. Since January 2017, the current U.S. presidential administration has issued two executive orders and other directives designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. For example, on October 12, 2017, the current U.S. presidential administration issued an executive order that expands the use of association health plans and allows anyone to purchase short-term health plans that provide temporary, limited insurance. This executive order also calls for the halt of federal payments to health insurers for cost-sharing reductions previously available to lower-income Americans to afford coverage. There is still uncertainty with respect to the impact this executive order could have on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017, or the Tax Reform Act, among other things, includes a provision that repealed, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." Additionally, on January 22, 2018, the current U.S. presidential administration signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018, or the BBA, among other things, amended the ACA, effective January 1, 2019, to increase from 50 percent to 70 percent the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole". More recently, in July 2018, CMS published a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. On December 14, 2018, a Texas U.S. District Court Judge ruled that the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress as part of the Tax Reform Act. While the Texas U.S. District Court Judge, as well as the current U.S. presidential administration and CMS, have stated that the ruling will have no immediate effect pending appeal of the decision, it is unclear how this decision, subsequent appeals, and other efforts to repeal and replace the ACA will impact the ACA. There is still uncertainty with respect to the impact the current U.S. presidential administration and Congress may have, if any, and any changes will likely take time to unfold, and could have an impact on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA.

However, we cannot predict the ultimate content, timing or effect of any healthcare reform legislation or the impact of potential legislation on us.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted to reduce healthcare expenditures. U.S. federal government agencies also currently face potentially significant spending reductions, which may further impact healthcare expenditures. On August 2, 2011, the Budget Control Act of 2011 among other things, created measures for spending reductions by Congress. A joint select committee on deficit reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, including the BBA, will remain in effect through 2027 unless additional Congressional action is taken. Moreover, on January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. If federal spending is further reduced, anticipated budgetary shortfalls may also impact the ability of relevant agencies, such as the FDA or the National Institutes of Health to continue to function at current levels. Amounts allocated to federal grants and contracts may be reduced or eliminated. These reductions may also impact the ability of relevant agencies to timely review and approve research and development, manufacturing, and marketing activities, which may delay our ability to develop, market and sell any products we may develop.

Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives. For example, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or MMA, changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for physician-administered drugs. In addition, this legislation provided authority for limiting the number of drugs that will be covered in any therapeutic class. While the MMA only applies to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in reimbursement that results from the MMA may result in a similar reduction in payments from private payors.

Recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. At the federal level, the current U.S. presidential administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Additionally, on May 11, 2018, the current U.S. presidential administration laid out the administration's "Blueprint" to reduce the cost of prescription medications while preserving innovation and cures. While the Department of Health and Human Services, or HHS, is soliciting feedback on some of these measures, other actions may be immediately implemented by HHS under existing authority. Further, on January 31, 2019, the HHS Office of Inspector General, proposed modifications to the federal Anti-Kickback Statute discount safe harbor for the purpose of reducing the cost of drug products to consumers which, among other things, if finalized, will affect discounts paid by manufacturers to Medicare Part D plans, Medicaid managed care organizations and pharmacy benefit managers working with these organizations. Although a number of these, and other potential, proposals will require additional authorization to become effective, Congress and the current U.S. presidential administration have each

indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or companion diagnostics or additional pricing pressures.

Additionally, on May 30, 2018, the Trickett Wendler, Frank Mongiello, Jordan McLinn, and Matthew Bellina Right to Try Act of 2017 was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase I clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA authorization under an FDA expanded access program; however, manufacturers are not obligated to provide investigational new drug products under the current federal right to try law.

We expect that the ACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved product. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products.

Our operations and relationships with healthcare providers, healthcare organizations, customers and third-party payors will be subject to applicable anti-bribery, anti-kickback, fraud and abuse, transparency and other healthcare and privacy laws and regulations, which could expose us to, among other things, enforcement actions, criminal sanctions, civil penalties, contractual damages, reputational harm, administrative burdens and diminished profits and future earnings.

Our current and future arrangements with healthcare providers, healthcare organizations, third-party payors and customers expose us to broadly applicable anti-bribery, fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we research, market, sell and distribute our product candidates. In addition, we may be subject to patient data privacy and security regulation by the U.S. federal government and the states and the foreign governments in which we conduct our business. Restrictions under applicable federal and state anti-bribery and healthcare laws and regulations, include the following:

- the federal Anti-Kickback Statute, which prohibits, among other things, individuals and entities from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under a federal and state healthcare program such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the federal criminal and civil false claims and civil monetary penalties laws, including the federal False Claims Act, which can be enforced through civil whistleblower or qui tam actions against individuals or entities, prohibits, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent, knowingly making, using or causing to be made or used, a false record or statement material to a false or fraudulent claim, or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government. In addition, certain marketing practices, including off-label promotion, may also violate false claims laws. Moreover, the government may assert that a

claim including items and services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act;

- HIPAA, which imposes criminal and civil liability, prohibits, among other things, knowingly and willfully executing, or attempting to execute a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services; similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- HIPAA, as amended by HITECH, and their respective implementing regulations, including the Final Omnibus Rule published on January 25, 2013, which impose obligations on certain healthcare providers, health plans, and healthcare clearinghouses, known as covered entities, as well as their business associates that perform certain services involving the storage, use or disclosure of individually identifiable health information, including mandatory contractual terms, with respect to safeguarding the privacy, security, and transmission of individually identifiable health information, and require notification to affected individuals and regulatory authorities of certain breaches of security of individually identifiable health information; the federal legislation commonly referred to as Physician Payments Sunshine Act, enacted as part of the ACA, and its implementing regulations, which requires certain manufacturers of covered drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children's Health Insurance Program, with certain exceptions, to report annually to CMS information related to certain payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by the physicians described above and their immediate family members, with the information made publicly available on a searchable website;

- state privacy laws and regulations, such as those of California and Massachusetts, that impose restrictive requirements regulating the use and disclosure of health information and other personally identifiable information (for example, in June 2018, California enacted the California Consumer Privacy Act, or CCPA. (which will go into effect on January 1, 2020) that gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing and receive detailed information about how their personal information is used, and provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation; resulting in increased compliance costs and potential liability);

- the U.S. Foreign Corrupt Practices Act of 1977, as amended, which prohibits, among other things, U.S. companies and their employees and agents from authorizing, promising, offering, or providing, directly or indirectly, corrupt or improper payments or anything else of value to foreign government officials, employees of public international organizations and foreign government owned or affiliated entities, candidates for foreign political office, and foreign political parties or officials thereof;

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, that may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; and

- certain state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug manufacturers to report information related to payments to physicians and other healthcare providers or marketing expenditures and drug pricing information, state and local laws that require the registration of pharmaceutical sales representatives, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

If we or our collaborators, manufacturers or service providers fail to comply with applicable federal, state or foreign laws or regulations, we could be subject to enforcement actions, which could affect our ability to develop, market and sell our products successfully and could harm our reputation and lead to reduced acceptance of our products by the market. These enforcement actions include, among others:

- exclusion from participation in government-funded healthcare programs; and
- exclusion from eligibility for the award of government contracts for our products.

Efforts to ensure that our current and future business arrangements with third parties comply with applicable healthcare laws and regulations could involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any such requirements, we may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, the curtailment or restructuring of our operations, loss of eligibility to obtain approvals from the FDA, exclusion from participation in government contracting, healthcare reimbursement or other government programs, including Medicare and Medicaid, integrity oversight and reporting obligations, or reputational harm, any of which could adversely affect our financial results. These risks cannot be entirely eliminated. Any action against us for an alleged or suspected violation could cause us to incur significant legal expenses and could divert our management's attention from the operation of our business, even if our defense is successful. In addition, achieving and sustaining compliance with applicable laws and regulations may be costly to us in terms of money, time and resources.

Even if we are able to commercialize any product candidate, such product candidate may become subject to unfavorable pricing regulations or third-party coverage and reimbursement policies, which would harm our business.

The regulations that govern regulatory approvals, pricing and reimbursement for new drugs vary widely from country to country. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing approval is granted. In some foreign markets, prescription biopharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain regulatory approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods and negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if our product candidates obtain regulatory approval.

Our ability to commercialize any products successfully also will depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from third-party payors including government authorities, such as Medicare and Medicaid, private health insurers and other organizations. Patients who are provided medical treatment for their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. Coverage and adequate reimbursement from third-party payors is critical to new product acceptance. Even if we succeed in bringing one or more products to the market, these products may not be considered cost-effective, and the amount reimbursed for any products may be insufficient to allow us to sell our products on a competitive basis. Because our programs are in the early stages of development, we are unable at this time to determine their cost effectiveness or the likely level or method of coverage and reimbursement. Increasingly, the third-party payors who reimburse patients or healthcare providers, such as government and private insurance plans, are requiring that drug companies provide them with predetermined discounts from list prices, and are seeking to reduce the prices charged or the amounts reimbursed for biopharmaceutical products. If the price we are able to charge for any products we develop, or the coverage and reimbursement provided for such products, is inadequate in light of our development and other costs, our return on investment could be affected adversely.

There may be significant delays in obtaining reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or similar foreign regulatory authorities. Moreover, eligibility for reimbursement does not imply that any drug or therapeutic biologic will be reimbursed in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution.

Interim reimbursement levels for new drugs, if applicable, may also be insufficient to cover our costs and may not be made permanent. Reimbursement rates may be based on payments allowed for lower cost drugs that are already reimbursed, may be incorporated into existing payments for other services and may reflect budgetary constraints or imperfections in Medicare data. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Further, no uniform policy for coverage and reimbursement exists in the United States, and coverage and reimbursement can differ significantly from payor to payor. As a result, obtaining coverage and reimbursement approval of a product from a third-party payor is a time consuming and costly process that could require us to provide to each payor supporting scientific, clinical and cost effectiveness data for the use of our products on a payor-by-payor basis, with no assurance that coverage and adequate reimbursement will be obtained. There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement rates, but also have their own methods and approval process apart from Medicare determinations. Our inability to promptly obtain coverage and adequate reimbursement rates from both government-funded and private payors for new drugs that we develop and for which we obtain regulatory approval could have a material and adverse effect on our business, financial condition, results of operations and prospects.

If we decide to pursue a Fast Track Designation by the FDA, it may not lead to a faster development or regulatory review or approval process.

We may seek Fast Track Designation for one or more of our product candidates. If a drug is intended for the treatment of a serious or life-threatening condition and the drug demonstrates the potential to address unmet medical needs for this condition, the product sponsor may apply for FDA Fast Track Designation. The FDA has broad discretion whether or not to grant this designation, so even if we believe a particular product candidate is eligible for this designation, we cannot assure you that the FDA would decide to grant it. Even if we do receive Fast Track Designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. The FDA may withdraw Fast Track Designation if it believes that the designation is no longer supported by data from our clinical development program.

If we decide to seek Orphan Drug Designation for some of our product candidates, we may be unsuccessful or may be unable to maintain the benefits associated with Orphan Drug Designation, including the potential for supplemental market exclusivity.

As part of our business strategy, we may seek Orphan Drug Designation for one or more of our product candidates, and we may be unsuccessful. Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a drug as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals in the United States, or a patient population greater than 200,000 in the United States where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States. In the United States, Orphan Drug Designation entitles a party to financial incentives such as opportunities for grant funding toward clinical trial costs, tax advantages and user fee waivers. In addition, if a product that has Orphan Drug Designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan drug exclusivity, which means that the FDA may not approve any other applications to market the same product for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or where the manufacturer is unable to assure sufficient product quantity.

Even if we obtain Orphan Drug Designation for our product candidates in specific indications, we may not be the first to obtain marketing approval of these product candidates for the orphan-designated indication due to the uncertainties associated with developing pharmaceutical products. In addition, exclusive marketing rights in the United States may be limited if we seek approval for an indication broader than the orphan-designated indication or may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition. Further, even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs with different active moiety can be approved for the same condition. Even after an orphan product is approved, the FDA can subsequently approve the same drug with the same active moiety for the same condition if the FDA concludes that the later drug is safer, more effective or makes a major contribution to patient care. Orphan Drug Designation neither shortens the development time or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process. In addition, while we may seek Orphan Drug Designation for our product candidates, we may never receive such designations.

The recent tax reform legislation, which was signed into law on December 22, 2017 reduced the amount of the qualified clinical research costs for a designated orphan product that a sponsor may claim as a credit from 50% to 25%. Thus, further limiting the advantage and may impact our future business strategy of seeking the Orphan Drug Designation.

We are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws, and anti-money laundering laws and regulations. Compliance with these legal standards could impair our ability to compete in domestic and international markets. We can face criminal liability and other serious consequences for violations, which can harm our business.

We are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls, the U.S. Foreign Corrupt Practices Act of 1977, as amended, or FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors, and other collaborators from authorizing, promising, offering, or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We may engage third parties to sell our products sell our products outside the United States, to conduct clinical trials, and/or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors, and other collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences.

Governments outside the United States tend to impose strict price controls, which may adversely affect our revenue, if any.

In some countries, particularly member states of the European Union, or EU, the pricing of prescription drugs is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after receipt of marketing approval for a product. In addition, there can be considerable pressure by governments and other stakeholders on prices and reimbursement levels, including as part of cost containment measures. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various EU member states and parallel distribution, or arbitrage

between low-priced and high-priced member states, can further reduce prices. To obtain coverage and reimbursement or pricing approvals in some countries, we or current or future collaborators may be required to conduct a clinical trial or other studies that compare the cost-effectiveness of our therapeutic candidates to other available therapies in order to obtain or maintain reimbursement or pricing approval. Publication of discounts by third-party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If reimbursement of any product candidate approved for marketing is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business, financial condition, results of operations or prospects could be materially and adversely affected. In addition, the recent United Kingdom referendum on its membership in the EU resulted in a majority of United Kingdom voters voting to exit the European Union, often referred to as Brexit. Brexit could lead to legal uncertainty and potentially divergent national laws and regulations, including those related to the pricing of prescription pharmaceuticals, as the United Kingdom determines which EU laws to replicate or replace. If the United Kingdom were to significantly alter its regulations affecting the pricing of prescription pharmaceuticals, we could face significant new costs. As a result, Brexit could impair our ability to transact business in the EU and the United Kingdom.

European data collection is governed by restrictive regulations governing the use, processing, and cross-border transfer of personal information.

The collection and use of personal health data in the EU is governed by the provisions of the Data Protection Directive, and as of May 2018, the General Data Protection Regulation, or GDPR. These directives impose several requirements relating to the consent of the individuals to whom the personal data relates, the information provided to the individuals, notification of data processing obligations to the competent national data protection authorities and the security and confidentiality of the personal data. The Data Protection Directive and GDPR also impose strict rules on the transfer of personal data out of the European Union to the United States. Failure to comply with the requirements of the Data Protection Directive, the GDPR, and the related national data protection laws of the EU Member States may result in fines (for example, of up to €20,000,000 or up to 4% of the total worldwide annual turnover of the preceding financial year (whichever is higher)) and other administrative penalties. The GDPR regulations may impose additional responsibility and liability in relation to personal data that we process and we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules. This may be onerous and adversely affect our business, financial condition, results of operations and prospects. As a result of the implementation of the GDPR, we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules. There is significant uncertainty related to the manner in which data protection authorities will seek to enforce compliance with GDPR is not yet clear. For example, it is not clear if the authorities will conduct random audits of companies doing business in the EU, or if the authorities will wait for complaints to be filed by individuals who claim their rights have been violated. Enforcement uncertainty and the costs associated with ensuring GDPR compliance be onerous and adversely affect our business, financial condition, results of operations and prospects. Further, Brexit, has created uncertainty with regard to data protection regulation in the United Kingdom. In particular, it is unclear whether the United Kingdom will enact data protection legislation equivalent to the GDPR and how data transfers to and from the United Kingdom will be regulated.

Risks Related to Our Common Stock and This Offering

An active and liquid trading market for our common stock may not develop and you may not be able to resell your shares of common stock at or above the public offering price.

Prior to this offering, no market for shares of our common stock existed and an active trading market for our shares may never develop or be sustained following this offering. The initial public offering price for our common stock will be determined through negotiations with the underwriters and the negotiated price may not be indicative of the market price of our common stock after this offering. The market value of our common stock may decrease from the initial public offering price. As a result of these and other factors,

you may be unable to resell your shares of our common stock at or above the initial public offering price. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the fair market value of your shares. Furthermore, an inactive market may also impair our ability to raise capital by selling shares of our common stock and may impair our ability to enter into strategic collaborations or acquire companies or products by using our shares of common stock as consideration.

Our quarterly operating results may fluctuate significantly or may fall below the expectations of investors or securities analysts, each of which may cause our stock price to fluctuate or decline.

We expect our operating results to be subject to quarterly fluctuations. Our net loss and other operating results will be affected by numerous factors, including:

- variations in the level of expense related to the ongoing development of our MInT Platform, product candidates or future development programs;
- results of preclinical and future clinical trials, or the addition or termination of future clinical trials or funding support by us, or existing or future collaborators or licensing partners;
- our execution of any additional collaboration, licensing or similar arrangements, and the timing of payments we may make or receive under existing or future arrangements or the termination or modification of any such existing or future arrangements;
- any intellectual property infringement lawsuit or opposition, interference or cancellation proceeding in which we may become involved;
- additions and departures of key personnel;
- strategic decisions by us or our competitors, such as acquisitions, divestitures, spin-offs, joint ventures, strategic investments or changes in business strategy;
- if any of our product candidates receives regulatory approval, the terms of such approval and market acceptance and demand for such product candidates;
- regulatory developments affecting our product candidates or those of our competitors; and
- changes in general market and economic conditions.

If our quarterly operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any quarterly fluctuations in our operating results may, in turn, cause the price of our common stock to fluctuate substantially. We believe that quarterly comparisons of our financial results are not necessarily meaningful and should not be relied upon as an indication of our future performance.

The market price of our stock may be volatile, and you could lose all or part of your investment.

The trading price of our common stock following this offering is likely to be highly volatile and subject to wide fluctuations in response to various factors, some of which we cannot control. As a result of this volatility, investors may not be able to sell their common stock at or above the initial public offering price. The market price for our common stock may be influenced by many factors, including the other risks described in this section of the prospectus entitled "Risk Factors" and the following:

- results of preclinical studies and future clinical trials of our product candidates, or those of our competitors or our existing or future collaborators;
- regulatory or legal developments in the United States and other countries, especially changes in laws or regulations applicable to our product candidates;
- the success of competitive products or technologies;
- introductions and announcements of new products by us, our future commercialization partners, or our competitors, and the timing of these introductions or announcements;

- actions taken by regulatory agencies with respect to our products, clinical studies, manufacturing process or sales and marketing terms;
- actual or anticipated variations in our financial results or those of companies that are perceived to be similar to us;
- the success of our efforts to acquire or in-license additional technologies, products or product candidates;
- developments concerning any future collaborations, including but not limited to those with development and commercialization partners;
- market conditions in the pharmaceutical and biotechnology sectors;
- announcements by us or our competitors of significant acquisitions, strategic collaborations, joint ventures or capital commitments;
- developments or disputes concerning patents or other proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our product candidates and products;
- our ability or inability to raise additional capital and the terms on which we raise it;
- the recruitment or departure of key personnel;
- changes in the structure of healthcare payment systems;
- actual or anticipated changes in earnings estimates or changes in stock market analyst recommendations regarding our common stock, other comparable companies or our industry generally;
- our failure or the failure of our competitors to meet analysts' projections or guidance that we or our competitors may give to the market;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- announcement and expectation of additional financing efforts;
- speculation in the press or investment community;
- share price and fluctuations of trading volume of our common stock;
- sales of our common stock by us, insiders or our stockholders;
- the concentrated ownership of our common stock;
- changes in accounting principles;
- terrorist acts, acts of war or periods of widespread civil unrest;
- natural disasters and other calamities; and
- general economic, industry and market conditions.

In addition, the stock market in general, and the markets for pharmaceutical, biopharmaceutical and biotechnology stocks in particular, have experienced extreme price and volume fluctuations that have been often unrelated or disproportionate to the operating performance of the issuer. These broad market and industry factors may seriously harm the market price of our common stock, regardless of our actual operating performance. The realization of any of the above risks or any of a broad range of other risks, including those described in this "Risk Factors" section, could have a dramatic and adverse impact on the market price of our common stock.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for biopharmaceutical companies, which have experienced significant stock price volatility in recent years.

You will experience immediate and substantial dilution as a result of this offering and may experience additional dilution in the future.

If you purchase common stock in this offering, assuming an initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover of this prospectus, you will incur

immediate and substantial dilution of $ per share, representing the difference between the assumed initial public offering price of $ per share and our pro forma net tangible book value per share as of March 31, 2019 after giving effect to this offering and the conversion of all outstanding shares of our convertible preferred stock upon the completion of this offering.

Moreover, we issued options in the past to acquire common stock at prices significantly below the assumed initial public offering price. As of March 31, 2019, there were 10,417,696 shares of common stock subject to outstanding stock options. To the extent that the outstanding options are ultimately exercised, you will incur further dilution.

A sale of a substantial number of shares of our common stock may cause the price of our common stock to decline.

Based on shares outstanding as of March 31, 2019, upon completion of this offering, we will have outstanding a total of shares of common stock. Of these shares, only shares of common stock sold in this offering, or shares if the underwriters exercise their option to purchase additional shares in full, will be freely tradable, without restriction, in the public market immediately after this offering. Each of our officers, directors and certain of our stockholders have entered or will enter into lock-up agreements with the underwriters that restrict their ability to sell or transfer their shares. The lock-up agreements pertaining to this offering will expire 180 days from the date of this prospectus. However, our underwriters may, in their sole discretion, permit our officers, directors and other current stockholders who are subject to the contractual lock-up to sell shares prior to the expiration of the lock-up agreements. After the lock-up agreements expire, based on shares outstanding as of March 31, 2019, up to an additional shares of common stock will be eligible for sale in the public market, approximately of which are held by our officers, directors and their affiliated entities, and will be subject to volume limitations under Rule 144 under the Securities Act of 1933, as amended, or the Securities Act. In addition, shares of our common stock that are subject to outstanding options as of March 31, 2019 and shares of our common stock that are subject to options granted after March 31, 2019 will become eligible for sale in the public market to the extent permitted by the provisions of various vesting agreements, the lock-up agreements and Rules 144 and 701 under the Securities Act.

After this offering, the holders of an aggregate of shares of our outstanding common stock as of March 31, 2019 will have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or our stockholders. We also intend to register shares of common stock that we may issue under our equity incentive plans. Once we register these shares, they will be able to be sold freely in the public market upon issuance, subject to the 180-day lock-up period under the lock-up agreements described above and in the section entitled "Underwriting."

We cannot predict what effect, if any, sales of our shares in the public market or the availability of shares for sale will have on the market price of our common stock. However, future sales of substantial amounts of our common stock in the public market, including shares issued upon exercise of our outstanding warrant or options, or the perception that such sales may occur, could adversely affect the market price of our common stock.

We also expect that significant additional capital may be needed in the future to continue our planned operations. To raise capital, we may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. To the extent that additional capital is raised through the sale and issuance of shares or other securities convertible into shares, our stockholders will be diluted. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock.

We will have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering, and you will be relying on the judgment of our management regarding the application of these proceeds. You will not have the opportunity, as part of your investment decision, to assess whether we are using the proceeds appropriately. Our management might not apply our net proceeds in ways that ultimately increase the value of your investment. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline. Pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

If securities or industry analysts do not publish research or reports about our business, or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. We do not currently have and may never obtain research coverage by securities and industry analysts. If no or few securities or industry analysts commence coverage of us, the trading price for our common stock could be impacted negatively. In the event we obtain securities or industry analyst coverage, if any of the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, our intellectual property or our stock performance, or if our preclinical studies and clinical trials and operating results fail to meet the expectations of analysts, our stock price would likely decline. If one or more of such analysts cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause a decline in our stock price or trading volume.

Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

Based on the beneficial ownership of our common stock as of March 31, 2019, prior to this offering, our executive officers, directors, holders of 5% or more of our capital stock and their respective affiliates beneficially owned approximately 52% of our voting stock and, upon the completion of this offering, that same group will hold approximately % of our outstanding voting stock (assuming no exercise of the underwriters' option to purchase additional shares, no exercise of our outstanding warrant or options and no purchases of shares in this offering by any of this group), in each case assuming the conversion of all outstanding shares of our convertible preferred stock into shares of our common stock. As a result, these stockholders, if acting together, will continue to have significant influence over the outcome of corporate actions requiring stockholder approval, including the election of directors, amendment of our organizational documents, any merger, consolidation or sale of all or substantially all of our assets and any other significant corporate transaction. The interests of these stockholders may not be the same as or may even conflict with your interests. For example, these stockholders could delay or prevent a change of control of our company, even if such a change of control would benefit our other stockholders, which could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company or our assets and might affect the prevailing market price of our common stock. The significant concentration of stock ownership may adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise.

We are an "emerging growth company" and a "smaller reporting company" and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies or smaller reporting companies will make our common stock less attractive to investors.

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not

emerging growth companies, including (i) not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, (ii) reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports and proxy statements and (iii) exemptions from the requirements of holding nonbinding advisory stockholder votes on executive compensation and stockholder approval of any golden parachute payments not approved previously. In addition, as an emerging growth company, we are only required to provide two years of audited financial statements and two years of selected financial data in this prospectus.

We could be an emerging growth company for up to five years following the completion of this offering, although circumstances could cause us to lose that status earlier, including if we are deemed to be a "large accelerated filer," which occurs when the market value of our common stock that is held by non-affiliates equals or exceeds $700.0 million as of the prior June 30, or if we have total annual gross revenue of $1.07 billion or more during any fiscal year before that time, in which cases we would no longer be an emerging growth company as of the following December 31, or if we issue more than $1.0 billion in non-convertible debt during any three-year period before that time, in which case we would no longer be an emerging growth company immediately. Even after we no longer qualify as an emerging growth company, we may still qualify as a "smaller reporting company," which would allow us to take advantage of many of the same exemptions from disclosure requirements, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation in this prospectus and in our periodic reports and proxy statements. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our share price may be more volatile.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to take advantage of the benefits of this extended transition period. Our financial statements may therefore not be comparable to those of companies that comply with such new or revised accounting standards. Until the date that we are no longer an "emerging growth company" or affirmatively and irrevocably opt out of the exemption provided by Section 7(a)(2)(B) of the Securities Act, upon issuance of a new or revised accounting standard that applies to our financial statements and that has a different effective date for public and private companies, we will disclose the date on which adoption is required for non-emerging growth companies and the date on which we will adopt the recently issued accounting standard.

We are also a "smaller reporting company," meaning that the market value of our stock held by non-affiliates plus the proposed aggregate amount of gross proceeds to us as a result of this offering is less than $700.0 million and our annual revenue is less than $100.0 million during the most recently completed fiscal year. We may continue to be a smaller reporting company after this offering if either (i) the market value of our stock held by non-affiliates is less than $250.0 million or (ii) our annual revenue is less than $100.0 million during the most recently completed fiscal year and the market value of our stock held by non-affiliates is less than $700.0 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Anti-takeover provisions in our charter documents and under Delaware law could prevent or delay an acquisition of us, which may be beneficial to our stockholders, and may prevent attempts by our stockholders to replace or remove our current management.

Our restated certificate of incorporation and our restated bylaws that will be in effect upon completion of this offering contain provisions that could delay or prevent a change in control of our company. These provisions could also make it difficult for stockholders to elect directors who are not nominated by current members of our board of directors or take other corporate actions, including effecting changes in our management. These provisions:

- establish a classified board of directors so that not all members of our board are elected at one time;
- permit only the board of directors to establish the number of directors and fill vacancies on the board;
- provide that directors may only be removed "for cause" and only with the approval of two-thirds of our stockholders;
- require super-majority voting to amend some provisions in our restated certificate of incorporation and restated bylaws;
- authorize the issuance of "blank check" preferred stock that our board could use to implement a stockholder rights plan;
- eliminate the ability of our stockholders to call special meetings of stockholders;
- prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- prohibit cumulative voting; and
- establish advance notice requirements for nominations for election to our board or for proposing matters that can be acted upon by stockholders at annual stockholder meetings.

In addition, our restated certificate of incorporation will provide that the Court of Chancery of the State of Delaware will be the exclusive forum for: any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, or the DGCL, our restated certificate of incorporation, or our restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our directors, officers, or other employees, which may discourage lawsuits with respect to such claims. Alternatively, if a court were to find the choice of forum provision contained in our restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, operating results and financial condition.

In addition, Section 203 of the DGCL may discourage, delay or prevent a change in control of our company. Section 203 imposes certain restrictions on mergers, business combinations and other transactions between us and holders of 15% or more of our common stock.

We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices.

As a public company, and particularly after we are no longer an emerging growth company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of the Nasdaq Global Market and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, we expect these rules and regulations to substantially increase our legal and financial compliance costs and to make some activities more time

consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain sufficient coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers. The increased costs may require us to reduce costs in other areas of our business or increase the prices of our services. Moreover, these rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

We are not currently required to comply with the SEC's rules that implement Section 404 of the Sarbanes-Oxley Act, and are therefore not required to make a formal assessment of the effectiveness of our internal control over financial reporting for that purpose. Pursuant to Section 404, we will be required to furnish a report by our management on our internal control over financial reporting. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. This process will be time-consuming, costly and complicated. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by Section 404. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements. In addition, if we are not able to continue to meet these requirements, we may not be able to remain listed on the Nasdaq Global Market.

Because we do not anticipate paying any cash dividends on our capital stock in the foreseeable future, capital appreciation, if any, will be your sole source of gain.

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the sections entitled "Prospectus Summary," "Risk Factors," "Use of Proceeds," "Management's Discussion and Analysis of Financial Condition and Results of Operations," and "Business" contains forward-looking statements. The words "believe," "may," "will," "potentially," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "expect" and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this prospectus include, among other things, statements about:

- our plans to develop and commercialize oral small-molecule integrin therapeutics, including our lead wholly-owned program for a_4b_7-specific integrin inhibitors affecting inflammation, for the treatment of inflammatory bowel disease, and our most advanced product candidate, MORF-720, for the treatment of idiopathic pulmonary fibrosis, which we are developing in collaboration with AbbVie;
- our ability to obtain funding for our operations, including funding necessary to complete further discovery, development and commercialization of our product candidates;
- the timing of and our ability to obtain and maintain regulatory approvals for MORF-720 and our lead wholly-owned program for a_4b_7-specific integrin inhibitors, as well as our other product candidates;
- future agreements with third parties in connection with the commercialization of our product candidates;
- the success, cost and timing of our product candidate development activities and planned clinical trials;
- the rate and degree of market acceptance and clinical utility of our product candidates;
- our commercialization, marketing and manufacturing capabilities and strategy;
- the success of competing therapies that are or may become available;
- our ability to attract and retain key management and technical personnel;
- our expectations regarding our ability to obtain, maintain and enforce intellectual property protection for our product candidates;
- our use of the net proceeds from this offering; and
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in "Risk Factors" and elsewhere in this prospectus. Moreover, we operate in a competitive and rapidly changing environment, and new risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to actual results or to changes in our expectations, except as required by law.

You should read this prospectus and the documents that we reference in this prospectus and have filed with the Securities and Exchange Commission as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

USE OF PROCEEDS

We estimate that we will receive net proceeds of approximately $ from the sale of shares of common stock in this offering, or approximately $ if the underwriters exercise their option to purchase additional shares in full, based on an assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses.

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, would increase (decrease) the net proceeds to us from this offering by $ million, assuming the number of shares offered, as set forth on the cover of this prospectus, remains the same, and after deducting the estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of common stock offered would increase (decrease) the net proceeds that we receive from this offering by $ million, assuming that the assumed initial public offering price remains the same and after deducting the estimated underwriting discounts and commissions.

We currently intend to use the net proceeds we receive from this offering together with our existing cash and cash equivalents, as follows:

- approximately $ million to $ million to fund further development of our a_4b_7 program through ;
- approximately $ million to $ million to fund further development of MORF-720, our a_vb_6 product candidate, through ;
- approximately $ million to $ million to fund further development of our MInT Platform, to broaden our pipeline of product candidates; and
- any remaining amounts to fund working capital and general corporate purposes.

Based on our planned use of the net proceeds, we estimate such funds, together with our existing cash and cash equivalents, will be sufficient for us to fund our operating expenses and capital expenditure requirements through at least .

The expected use of the net proceeds from the offering represents our intentions based upon our current plans and business conditions. The amounts we actually expend in these areas, and the timing thereof, may vary significantly from our current intentions and will depend on a number of factors, including the success of research and product development efforts, cash generated from future operations and actual expenses to operate our business. We may use a portion of the net proceeds for the acquisition of, or investment in, businesses that complement our business, although we have no present commitments or agreements.

The amounts and timing of our preclinical and clinical expenditures and the extent of preclinical and clinical development may vary significantly depending on numerous factors, including the status, results and timing of our current preclinical studies and the preclinical studies and clinical trials which we may commence in the future, the product approval process with the FDA and other regulatory agencies, our current collaborations and any new collaborations we may enter into with third parties and any unforeseen cash needs. As a result, we cannot predict with any certainty all of the particular uses for the net proceeds or the amounts that we will actually spend on the uses set forth above. Accordingly, our management will have broad discretion in the application of the net proceeds, and investors will be relying on the judgment of our management regarding the application of the net proceeds of this offering.

The expected net proceeds of this offering will not be sufficient for us to fund any of our product candidates through regulatory approval, and we will need to raise substantial additional capital to complete the development and commercialization of our product candidates.

Pending the uses described above, we intend to invest the net proceeds from this offering in short term, investment-grade interest-bearing securities such as money market accounts, certificates of deposit, commercial paper and guaranteed obligations of the U.S. government.

DIVIDEND POLICY

We have never declared or paid cash dividends on our common stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any cash dividends on our common stock in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant.

CAPITALIZATION

The following table sets forth our cash, cash equivalents and marketable securities and capitalization as of March 31, 2019 on:

- an actual basis;
- a pro forma basis, giving effect to (i) the automatic conversion of 122,513,962 outstanding shares of our convertible preferred stock as of March 31, 2019 immediately prior to the completion of this offering, and (ii) the automatic conversion of an outstanding warrant exercisable for 39,800 shares of our Series Seed convertible preferred stock into a warrant exercisable for 39,800 shares of common stock in connection with this offering and the related reclassification of the convertible preferred stock warrant liability to stockholders' (deficit) equity; and
- a pro forma as adjusted basis, giving effect to (i) the pro forma adjustments described above and (ii) the sale of shares of common stock in this offering, based upon an assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses.

The pro forma as adjusted information set forth in the table below is illustrative only and will be adjusted based on the actual initial public offering price and other terms of this offering as determined at pricing.

You should read this table together with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes, each included elsewhere in this prospectus.

	As of March 31, 2019		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in thousands, except share and per share data)		
Cash, cash equivalents and marketable securities	$ 186,070	$ 186,070	$
Convertible preferred stock, $0.0001 par value; 122,553,762 shares authorized, 122,513,962 shares issued and outstanding and aggregate liquidation preference of $140,480, actual; no shares issued or outstanding, pro forma or pro forma as adjusted	$ 139,809	$ —	$
Stockholders' (deficit) equity:			
Preferred stock, $0.0001 par value: no shares authorized, issued or outstanding, actual; shares authorized, no shares issued or outstanding pro forma and pro forma as adjusted	—	—	
Common stock, $0.0001 par value; 151,000,000 shares authorized, 11,270,581 shares issued and outstanding, actual; shares authorized, pro forma and pro forma as adjusted; 133,784,543 shares issued and outstanding, pro forma; shares issued and outstanding, pro forma as adjusted	1	14	
Additional paid-in capital	2,131	141,952	
Accumulated other comprehensive income	25	25	
Accumulated deficit	(59,385)	(59,385)	
Total stockholders' (deficit) equity	(57,228)	82,606	
Total capitalization	$ 82,581	$ 82,606	$

The number of shares of our common stock to be outstanding after this offering is based on 137,593,380 shares of our common stock outstanding as of March 31, 2019, and gives effect to the automatic conversion of all 122,513,962 shares of our outstanding convertible preferred stock as of March 31, 2019 into an aggregate of 122,513,962 shares of common stock immediately prior to the completion of this offering, and excludes:

- 10,417,696 shares of common stock issuable upon the exercise of options outstanding as of March 31, 2019 under our 2018 Stock Incentive Plan, with a weighted-average exercise price of $0.74 per share;
- 1,522,000 shares of common stock issuable upon the exercise of options outstanding that were granted after March 31, 2019 under our 2018 Stock Incentive Plan, with an exercise price of $1.33 per share;
- 39,800 shares of common stock issuable upon the exercise of a warrant to purchase 39,800 shares of our Series Seed convertible preferred stock outstanding as of March 31, 2019, with an exercise price of $0.75286 per share, that will automatically convert to a warrant to purchase 39,800 shares of our common stock upon the completion of this offering; and
- shares of common stock reserved for future issuance under our stock-based compensation plans, consisting of (i) 2,667,369 shares of common stock reserved for future issuance under our 2018 Stock Incentive Plan as of March 31, 2019, (ii) shares of common stock reserved for future issuance under our 2019 Equity Incentive Plan, which will become effective on the date immediately prior to the date of the effectiveness of the registration statement of which this prospectus forms a part and (iii) shares of common stock reserved for future issuance under our 2019 Employee Stock Purchase Plan, which will become effective on the date of the effectiveness of the registration statement of which this prospectus forms a part. Upon completion of this offering, any remaining shares available for issuance under our 2018 Stock Incentive Plan will be added to the shares reserved under our 2019 Equity Incentive Plan and we will cease granting awards under our 2018 Stock Incentive Plan. Our 2019 Equity Incentive Plan and 2019 Employee Stock Purchase Plan also provide for automatic annual increases in the number of shares reserved under the plans each year, as more fully described in "Executive Compensation — Equity Compensation Plans and Other Benefit Plans."

DILUTION

If you invest in our common stock in this offering, your ownership interest will be immediately diluted to the extent of the difference between the amount per share paid by purchasers of shares of common stock in this offering and the pro forma as adjusted net tangible book value per share of common stock immediately after this offering.

Net tangible book value (deficit) per share is determined by dividing our total tangible assets (which excludes deferred offering costs) less our total liabilities and convertible preferred stock by the number of shares of common stock outstanding. Our historical net tangible book value (deficit) as of March 31, 2019 was $(57.2) million, or $(5.08) per share, based on 11,270,581 shares of common stock outstanding as of March 31, 2019. Our pro forma net tangible book value as of March 31, 2019 was approximately $82.6 million, or $0.62 per share of common stock. Our pro forma net tangible book value per share represents the amount of our total tangible assets (which excludes deferred offering costs) reduced by the amount of our total liabilities and divided by the total number of shares of our common stock outstanding as of March 31, 2019, after giving effect to (i) the automatic conversion of all outstanding shares of our convertible preferred stock as of March 31, 2019 into an aggregate of 122,513,962 shares of common stock effective immediately prior to the completion of this offering, and (ii) the automatic conversion of an outstanding warrant exercisable for 39,800 shares of our Series Seed convertible preferred stock into a warrant exercisable for 39,800 shares of common stock in connection with this offering.

Net tangible book value dilution per share to new investors in this offering represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the pro forma as adjusted net tangible book value per share of common stock immediately after completion of this offering. After giving effect to (i) the pro forma adjustments set forth above and (ii) our sale in this offering of shares of our common stock at an assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses, our pro forma as adjusted net tangible book value as of March 31, 2019 would have been approximately $ million, or $ per share of our common stock. This represents an immediate increase in pro forma net tangible book value of $ per share to our existing stockholders and an immediate dilution of $ per share to investors in this offering, as illustrated in the following table:

Assumed initial public offering price, per share		$
Historical net tangible book value per share as of March 31, 2019	$ (5.08)	
Increase attributable to pro forma adjustments	5.70	
Pro forma net tangible book value per share as of March 31, 2019	0.62	
Increase in pro forma net tangible book value per share attributable to new investors in this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution per share to new investors in this offering		$

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, would increase (decrease) our pro forma as adjusted net tangible book value by $ million, or $ per share and the dilution in pro forma as adjusted net tangible book value per share to new investors in this offering by $ per share, assuming the number of shares offered, as set forth on the cover of this prospectus,

remains the same, and after deducting the estimated underwriting discounts and commissions. Similarly, each increase of 1,000,000 shares in the number of shares of common stock offered in this offering would increase our pro forma as adjusted net tangible book value by approximately $ million, or approximately $ per share, and would increase dilution per share to new investors in this offering by approximately $ per share and each decrease of 1,000,000 shares in the number of shares of common stock offered in this offering would decrease our pro forma as adjusted net tangible book value by approximately $ million, or approximately $ per share, and would decrease dilution per share to new investors in this offering by approximately $ per share, assuming the assumed initial public offering price per share remains the same and after deducting the estimated underwriting discounts and commissions. The pro forma as adjusted information is illustrative only, and we will adjust this information based on the actual initial public offering price and other terms of this offering determined at pricing.

If the underwriters exercise their option in full to purchase additional shares, the pro forma as adjusted net tangible book value per share after this offering would be $ per share, the increase in pro forma as adjusted net tangible book value per share to existing stockholders would be $ per share and the dilution to new investors in this offering would be $ per share.

The following table shows, as of March 31, 2019, on a pro forma as adjusted basis described above, the differences between the existing stockholders and the purchasers of shares in this offering with respect to the number of shares purchased from us, the total consideration paid, which includes net proceeds received from the issuance of common and convertible preferred stock, cash received from the exercise of stock options, and the value of any stock issued for services and the average price paid per share (in thousands, except per share amounts and percentages):

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders		%	$	%	$
New investors					$
Total		100.0%	$	100.0%	

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, would increase (decrease) total consideration paid by new investors by approximately $ million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by percentage points and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by percentage points, assuming that the number of shares offered, as set forth on the cover of this prospectus, remains the same, and after deducting the estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of common stock offered in this offering would increase (decrease) total consideration paid by new investors by approximately $ million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by percentage points and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by percentage points, assuming the assumed initial public offering price remains the same and after deducting the estimated underwriting discounts and commissions.

In addition, to the extent that any outstanding options or warrants are exercised, investors in this offering will experience further dilution.

Except as otherwise indicated, the above discussion and tables assume no exercise of the underwriters' option to purchase additional shares. If the underwriters exercise their option to purchase additional shares in full, our existing stockholders would own % and our new investors would own % of the total number of shares of our common stock outstanding upon the completion of this offering.

The number of shares of common stock outstanding as of March 31, 2019 excludes:

- 10,417,696 shares of common stock issuable upon the exercise of options outstanding as of March 31, 2019 under our 2018 Stock Incentive Plan, with a weighted-average exercise price of $0.74 per share;
- 1,522,000 shares of common stock issuable upon the exercise of options outstanding that were granted after March 31, 2019 under our 2018 Stock Incentive Plan, with an exercise price of $1.33 per share;
- 39,800 shares of common stock issuable upon the exercise of a warrant to purchase 39,800 shares of our Series Seed convertible preferred stock outstanding as of March 31, 2019, with an exercise price of $0.75286 per share, that will automatically convert to a warrant to purchase 39,800 shares of our common stock upon the completion of this offering; and
- shares of common stock reserved for future issuance under our stock-based compensation plans, consisting of (i) 2,667,369 shares of common stock reserved for future issuance under our 2018 Stock Incentive Plan as of March 31, 2019, (ii) shares of common stock reserved for future issuance under our 2019 Equity Incentive Plan, which will become effective on the date immediately prior to the date of the effectiveness of the registration statement of which this prospectus forms a part and (iii) shares of common stock reserved for future issuance under our 2019 Employee Stock Purchase Plan, which will become effective on the date of the effectiveness of the registration statement of which this prospectus forms a part. Upon completion of this offering, any remaining shares available for issuance under our 2018 Stock Incentive Plan will be added to the shares reserved under our 2019 Equity Incentive Plan and we will cease granting awards under our 2018 Stock Incentive Plan. Our 2019 Equity Incentive Plan and 2019 Employee Stock Purchase Plan also provide for automatic annual increases in the number of shares reserved under the plans each year, as more fully described in "Executive Compensation — Equity Compensation Plans and Other Benefit Plans."

SELECTED CONSOLIDATED FINANCIAL DATA

The following tables set forth our selected consolidated statements of operations and consolidated balance sheet data. The selected consolidated statements of operations data presented below for the years ended December 31, 2017 and 2018 and the selected consolidated balance sheet data as of December 31, 2017 and 2018 are derived from our audited consolidated financial statements included elsewhere in this prospectus, which financial statements have been audited by Ernst & Young LLP, our independent registered public accounting firm. We have derived the consolidated statements of operations data for the three months ended March 31, 2018 and 2019 and the consolidated balance sheet data as of March 31, 2019 from our unaudited consolidated financial statements included elsewhere in this prospectus. The following selected consolidated financial data below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in any future period and our results for the three months ended March 31, 2019 are not necessarily indicative of the results that may be expected for the year ended December 31, 2019. The selected consolidated financial data in this section are not intended to replace the consolidated financial statements and are qualified in their entirety by the consolidated financial statements and related notes included elsewhere in this prospectus.

	Year Ended December 31,		Three Months Ended March 31,	
	2017	2018	2018	2019
	(in thousands, except share and per share data)			
Consolidated Statements of Operations				
Collaboration revenue — related party	$ —	$ 3,358	$ —	$ 5,570
Collaboration revenue — other	—	—	—	498
Total collaboration revenue	—	—	—	6,068
Operating expenses:				
Research and development	14,103	22,631	4,284	10,370
General and administrative	2,826	5,355	935	1,832
Total operating expenses	16,929	27,986	5,219	12,202
Loss from operations	(16,929)	(24,628)	(5,219)	(6,134)
Other income (expense):				
Interest income, net	14	871	55	1,063
Other expense, net	(5)	(74)	(16)	—
Total other income	9	797	39	1,063
Loss before provision for income taxes	(16,920)	(23,831)	(5,180)	(5,071)
Provision for income taxes	—	—	—	(129)
Net loss	$ (16,920)	$ (23,831)	$ (5,180)	$ (5,200)
Net loss per unit, basic and diluted	$ (2.87)		$ (0.88)	
Net loss per share, basic and diluted		$ (3.82)		$ (0.47)
Weighted average common units outstanding, basic and diluted	5,896,584		5,896,584	
Weighted average common shares outstanding, basic and diluted		6,237,889		10,962,388
Pro-forma net loss per share, basic and diluted (unaudited)[1]		$ (0.31)		$ (0.04)
Pro-forma weighted average common shares outstanding, basic and diluted (unaudited)[1]		77,596,055		133,476,350

(1) Basic and diluted pro forma net loss per share give effect to the automatic conversion of all shares of convertible preferred stock into shares of common stock upon completion of this offering, assuming such conversion occurred on the later of January 1, 2018 or the original issuance dates of the convertible preferred units or convertible preferred stock.

	As of December 31,		As of March 31,
	2017	2018	2019
	(in thousands)		
Consolidated Balance Sheet Data:			
Cash, cash equivalents and marketable securities	$ 20,750	$ 185,901	186,070
Working capital[(1)]	18,712	152,220	147,035
Total assets	23,242	189,305	190,291
Convertible preferred units/stock	49,687	139,809	139,809
Accumulated deficit	(30,354)	(54,185)	(59,385)
Total stockholders' (deficit) equity	(29,693)	(52,552)	(57,228)

(1) We define working capital as current assets less current liabilities. See our consolidated financial statements and related notes appearing at the end of this prospectus for further details regarding our current assets and current liabilities.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read together with our "Selected Consolidated Financial Data" and our consolidated financial statements and related notes appearing elsewhere in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans, objectives, expectations, projections and strategy for our business, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors identified below and those set forth in the "Risk Factors" section of this prospectus, our actual results and the timing of selected events could differ materially from the forward-looking statements contained in the following discussion and analysis. Please also see the section entitled "Special Note Regarding Forward-Looking Statements."

Overview

We are a biopharmaceutical company applying our proprietary insights into integrins to discover and develop a pipeline of potentially first-in-class oral small-molecule integrin therapeutics. Integrins are a target class with multiple approved injectable blockbuster drugs for the treatment of serious chronic diseases, including autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer. To date, no oral small-molecule integrin therapies have been approved by the FDA. Despite significant unsuccessful efforts, we believe tremendous untapped potential remains for us to develop oral integrin therapies. We created the Morphic integrin technology platform, or MInT Platform, by leveraging our unique understanding of integrin structure and biology to develop novel product candidates designed to achieve the potency, high selectivity and pharmaceutical properties required for oral administration. We are advancing our preclinical pipeline, including our lead wholly-owned program for a_4b_7 specific integrin inhibitors affecting inflammation into clinical development for the treatment of inflammatory bowel disease, or IBD. We are also developing our most advanced product candidate, MORF-720, a selective oral a_vb_6 specific integrin inhibitor into clinical development for the treatment of idiopathic pulmonary fibrosis, or IPF, in collaboration with AbbVie Inc., or AbbVie. We intend to advance our a_4b_7 program and MORF-720 toward Investigational New Drug applications, or INDs, by the middle of 2020 and as early as the end of 2019, respectively. Beyond our current targets, we are using our MInT Platform to create a broad pipeline of programs across a variety of therapeutic areas, all of which aim to harness the potential of inhibition or activation.

We were formed as a limited liability company under the laws of the State of Delaware in August 2014 under the name Integrin Rock, LLC. We subsequently changed our name to Morphic Rock Holding, LLC in October 2014 and then to Morphic Holding, LLC in June 2016, and we subsequently converted to a corporation under the name Morphic Holding, Inc. in December 2018. In connection with the conversion to a Delaware corporation, or the Reorganization, each of the outstanding units of the members of the limited liability company were converted into shares of capital stock. On the date of the Reorganization, the following conversions of limited liability units took place: (i) each Series B convertible preferred unit converted into one share of Series B convertible preferred stock; (ii) each Series A convertible preferred unit converted into one share of Series A convertible preferred stock; (iii) each Series Seed convertible preferred unit converted into one share of Series Seed convertible preferred stock; and (iv) each common unit converted into one share of common stock. In addition, previously outstanding vested and unvested incentive units, irrespective of any threshold amount or voting rights, were exchanged for an equal number of shares of common stock or restricted common stock, respectively. The restricted common stock was issued with the same vesting terms as the unvested incentive units held immediately prior to the Reorganization. For additional information see "Reorganization".

Upon consummation of the Reorganization, the historical consolidated financial statements of Morphic Holding, LLC became the historical consolidated financial statements of Morphic Holding, Inc., the entity

whose shares are being offered in this offering. Except as otherwise indicated or as the context otherwise requires, all information included in this prospectus is presented after giving effect to the Reorganization.

Since inception, our operations have focused on organizing and staffing our company, business planning, raising capital, establishing our intellectual property portfolio, and performing research to discover and develop oral small-molecule integrin therapeutics. Revenue generation activities have been limited to research services in each case, pursuant to our collaboration and option agreement with AbbVie and, since February 2019, our research collaboration and option agreement with Janssen Pharmaceuticals, Inc., or Janssen, referred to as the Janssen Agreement. We do not have any products approved for sale and have not generated any revenue from product sales. In addition to the foregoing sources of revenue, we have funded our operations primarily through the sale and issuance of our convertible preferred equity securities and borrowings under a loan and security agreement, or the credit facility, with Silicon Valley Bank, or SVB. From inception through March 31, 2019, we have raised an aggregate of approximately $141.0 million of gross proceeds through the issuance of equity and debt, of which $140.0 million was from the issuance of convertible preferred equity securities and $1.0 million was from borrowings under the credit facility. In October 2018, pursuant to our collaboration and option agreement with AbbVie, we received an upfront payment of $100.0 million for research and development activities, and provided to AbbVie exclusive license options on product candidates directed at multiple targets. In March 2019, pursuant to the Janssen Agreement, we received an upfront payment of $10.0 million and provided Janssen with exclusive license options on product candidates directed at multiple targets.

Since inception, we have incurred significant operating losses. Our net losses were $16.9 million and $23.8 million for the years ended December 31, 2017 and 2018, respectively, and $5.2 million for the three months ended March 31, 2019. As of March 31, 2019, we had an accumulated deficit of $59.4 million. We expect to continue to incur significant and increasing expenses and operating losses for the foreseeable future, as we advance our current and future product candidates through preclinical and clinical development, seek regulatory approval for them, maintain and expand our intellectual property portfolio, hire additional research and development and business personnel and operate as a public company.

We will not generate revenue from product sales unless and until we successfully complete clinical development and obtain regulatory approval for our product candidates. In addition, if we obtain regulatory approval for our product candidates and do not enter into a third-party commercialization partnership, we expect to incur significant expenses related to developing our commercialization capability to support product sales, marketing, manufacturing, and distribution activities.

As a result, we will need substantial additional funding to support our continuing operations and pursue our growth strategy. Until we can generate significant revenue from product sales, if ever, we expect to finance our operations through a combination of public or private equity offerings and debt financings or other sources, such as potential collaboration agreements. We may be unable to raise additional funds or enter into such other agreements or arrangements when needed on acceptable terms, or at all. Our failure to raise capital or enter into such agreements as, and when, needed, could have a material adverse effect on our business, results of operations, and financial condition.

As of March 31, 2019, we had cash, cash equivalents, and marketable securities of $186.1 million. We believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our operating expenses and capital expenditure requirements into .

Financial Operations Overview

Collaboration Revenue

We do not have any products approved for sale, and as a result, we have not generated any revenue from product sales and do not expect to generate any revenue from the sale of products in the foreseeable future.

To date, all of our collaboration revenue has been derived from our agreements with AbbVie and Janssen. We expect that our revenue until we have a marketed product will be derived primarily from payments under our collaboration and option agreement with AbbVie, our Janssen Agreement, or other collaboration and license agreements that we may enter into in the future, if any.

Collaboration Revenue — Related Party

In October 2018, we entered into a collaboration with AbbVie, a related party holding in aggregate approximately 5% of Series A and Series B preferred stock, designed to advance a number of our oral integrin therapeutics for fibrosis-related indications. Under the terms of the agreement, AbbVie paid us an upfront payment of $100.0 million for research and development activities, and we provided to AbbVie exclusive license options on product candidates directed at multiple targets.

For each compound, we will conduct research and development activities through the completion of IND-enabling studies, at which point AbbVie may pay a license fee of $20.0 million, on a target-by-target basis, to exercise its exclusive license option and assume responsibility for global development and commercialization. We are also eligible for clinical and commercial milestone payments and tiered royalties from high single digit to low teens on worldwide net sales for each licensed product. In addition, for certain compounds for which we have completed IND-enabling studies and which meet certain advancement criteria for a liver indication, we have the option to commit to share development costs in exchange for an increased fixed royalty rate. We may exercise this option following completion of the first phase IIb clinical trial for the relevant product. For a more complete description of our collaboration with AbbVie, see "Business — License Agreements."

Collaboration Revenue — Other

In February 2019, we entered into the Janssen Agreement to discover and develop novel integrin therapeutics for patients with conditions not adequately addressed by current therapies. The Janssen Agreement focuses on three integrin targets, each target the subject of a research program, with the ability to substitute up to two integrin targets not explored by us. Upon completing IND-enabling studies, on a research program-by-research program basis, Janssen may exercise an exclusive option to obtain an exclusive license with respect to the target that is the subject of the research program, including all licensed compounds that are the subject of the applicable research program, and then Janssen will be responsible for global clinical development and commercialization. In consideration of the rights granted, Janssen paid us an upfront fee of $10.0 million for each of the first two research programs, and will pay us an additional $5.0 million fee upon commencement of the third research program, and will fund research activities. Pursuant to the terms of the agreement, we are also eligible to receive additional milestone and royalty payments. For a more complete description of our collaboration with Janssen, see "Business — License Agreements."

Expenses

Research and Development

Research and development expenses consist primarily of costs incurred for our research and development activities, including our product candidate discovery efforts and preclinical studies under our research programs, which include:

- § employee-related expenses, including salaries, benefits, and equity-based compensation expense for our research and development personnel;

- costs of funding research performed by third parties that conduct research and development and preclinical activities on our behalf;
- costs of manufacturing clinical supply related to any of our current or future product candidates;
- costs of conducting preclinical studies of any of our current or future product candidates;
- consulting and professional fees related to research and development activities, including equity-based compensation to non-employees;
- costs of purchasing laboratory supplies and non-capital equipment used in our preclinical studies;
- costs related to compliance with clinical regulatory requirements;
- facility costs and other allocated expenses, which include expenses for rent and maintenance of facilities, insurance, depreciation and other supplies; and
- fees for maintaining licenses and other amounts due under our third-party licensing agreements.

Research and development costs are expensed as incurred. Costs for certain activities are recognized based on an evaluation of the progress to completion of specific tasks using data such as information provided to us by our vendors and analyzing the progress of our preclinical studies or other services performed. Significant judgment and estimates are made in determining the accrued expense balances at the end of any reporting period. Non-refundable advance payments for research and development goods or services to be received in the future from third parties are deferred and capitalized. The capitalized amounts are expensed as the related goods are delivered or the services are performed.

The successful development of our product candidates is highly uncertain. As such, at this time, we cannot reasonably estimate or know the nature, timing, and estimated costs of the efforts that will be necessary to complete our future product candidates. We are also unable to predict when, if ever, material net cash inflows will commence from the sale of our product candidates, if approved. This is due to the numerous risks and uncertainties associated with developing product candidates, including the uncertainty of:

- the scope, rate of progress, and expenses of our ongoing research activities as well as any additional preclinical studies and clinical trials and other research and development activities;
- establishing an appropriate safety profile;
- successful enrollment in and completion of clinical trials;
- whether our product candidates show safety and efficacy in our clinical trials;
- receipt of marketing approvals from applicable regulatory authorities, if any;
- establishing commercial manufacturing capabilities or making arrangements with third-party manufacturers;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- commercializing the product candidates, if and when approved, whether alone or in collaboration with others; and
- continued acceptable safety profile of the products following any regulatory approval.

A change in the outcome of any of these variables with respect to the development of our current and future product candidates would significantly change the costs and timing associated with the development of those product candidates.

Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect research and development costs to increase significantly for the foreseeable future as we continue the development of our product candidates. However, we do not believe that it is possible at this time to accurately project total program-specific expenses through commercialization. There are numerous factors associated with the successful commercialization of any of our product candidates, including future trial design and various regulatory requirements, many of which cannot be determined with accuracy at this time based on our stage of development. Additionally, future commercial and regulatory factors beyond our control will impact our clinical development programs and plans.

General and Administrative

General and administrative expenses consist primarily of employee-related expenses, including salaries, benefits, and equity-based compensation expenses for personnel in executive, finance, accounting, business development, legal, and human resources functions. Other significant general and administrative expenses include facility costs not otherwise included in research and development expenses, legal fees relating to patent and corporate matters, and fees for accounting and consulting services.

We anticipate that our general and administrative expenses will increase in the future as our business expands to support expected growth in research and development activities, including our future clinical programs. These increases will likely include increased costs related to the hiring of additional personnel and fees to outside consultants, among other expenses. We also anticipate increased expenses associated with being a public company, including costs for audit, legal, regulatory, and tax-related services related to compliance with the rules and regulations of the Securities and Exchange Commission, or SEC, and listing standards applicable to companies listed on a national securities exchange, director and officer insurance premiums, and investor relations costs. In addition, if we obtain regulatory approval for any of our product candidates and do not enter into a third-party commercialization collaboration, we expect to incur significant expenses related to building a sales and marketing team to support product sales, marketing and distribution activities.

Interest Income, Net

Interest income, net consists primarily of interest expense incurred on our credit facility, including amortization of debt discount and debt issuance costs, and interest income earned on our cash and cash equivalents.

Other Expense, Net

Other expense, net consists primarily of non-cash changes in the fair value of a warrant issued in connection with our credit facility and loss on extinguishment of our credit facility with SVB.

Provision for Income Tax Expense for Interim Periods

Provision for income tax expense recorded in any interim period is based on the estimated effective tax rate for the fiscal year for those tax jurisdictions that can be reliably estimated. Our calculation of the estimated effective tax rate requires us to estimate pre-tax income by tax jurisdiction as well as total tax expense for the fiscal year. Accordingly, the annual estimated effective tax rate is subject to adjustment if there are changes to the initial estimates of total tax expense or pre-tax income.

Results of Operations

Comparison of the Three Months Ended March 31, 2018 and 2019

The following table summarizes our results of operations for the three months ended March 31, 2018 and 2019:

	Three Months Ended March 31,		Change	
	2018	2019	$	%
	(in thousands, except percentages)			
Collaboration revenue — related party	$ —	$ 5,570	$ 5,570	*
Collaboration revenue — other	—	498	498	*
Total collaboration revenue	—	6,068	6,068	*
Operating expenses:				
Research and development	4,284	10,370	6,086	142%
General and administrative	935	1,832	897	96%
Total operating expenses	5,219	12,202	6,983	138%
Loss from operations	(5,219)	(6,134)	(915)	17%
Other income (expense):				
Interest income, net	55	1,063	1,008	*
Other expense, net	(16)	—	16	*
Total other income	39	1,063	1,024	*
Loss before provision for income taxes	$ (5,180)	$ (5,071)	$ 109	0.2%
Provision for income taxes	—	(129)	(129)	*
Net loss	$ (5,180)	$ (5,200)	$ (20)	0.3%

* Percentage not meaningful

Collaboration Revenue

Collaboration revenue increased by $5.6 million for the three months ended March 31, 2019 from $0 for the three months ended March 31, 2018. This increase was due to $5.1 million of revenue recognized under our collaboration with AbbVie that we executed in October 2018 to advance several oral integrin therapeutics for fibrosis-related indications, as well as $0.5 million in revenue from our collaboration with Janssen.

Research and Development

Research and development expense increased by $6.1 million, or 142%, from $4.3 million for the three months ended March 31, 2018 to $10.4 million for the three months ended March 31, 2019. A significant portion of our research and development costs have been external costs, which we track on a program-by-program basis after a clinical product candidate has been identified. Our internal research and development costs are primarily personnel-related costs, depreciation, and other indirect costs. The

following table summarizes our research and development expense for the three months ended March 31, 2018 and 2019:

	Three Months Ended March 31,		Change	
	2018	2019	$	%
	(in thousands, except percentages)			
External costs by program:				
a_vb_6	$ 843	$ 3,686	$ 2,843	344%
a_4b_7	733	2,167	1,434	196%
Other early development candidates and unallocated costs	839	1,358	519	62%
Total external costs	2,415	7,211	4,796	200%
Internal costs:				
Employee compensation and benefits	1,599	2,779	1,180	74%
Facility and other	270	380	110	41%
Total internal costs	1,869	3,159	1,290	69%
Total research and development expense	$ 4,284	$ 10,370	$ 6,086	142%

The increase in research and development expense was primarily attributable to the following:

- The $4.8 million increase in external costs was primarily related to research and development expenditures in connection with the AbbVie Agreement attributable to a_vb_6 and development of our a_4b_7 program.
- The $1.3 million increase in internal costs was primarily driven by an increase in employee compensation and benefits costs related to increased headcount in our research and development function.

General and Administrative

General and administrative expense increased by $0.9 million, or 96%, from $0.9 million for the three months ended March 31, 2018 to $1.8 million for the three months ended March 31, 2019.

The increase in general and administrative expense was primarily attributable to an increase of $0.4 million in employee compensation and benefits due to increased headcount and an increase of $0.3 million in professional services and consulting fees primarily due to increases in legal fees related to business development, regulatory and patent costs, accounting and audit fees, and public and investor relations fees due to ongoing business activities, and a $0.2 million increase in other expenses.

Interest Income, Net

Interest income increased by $1.0 from $0.1 million for the three months ended March 31, 2018 to $1.1 million for the three months ended March 31, 2019.

The increase in interest income, net was attributable to increased income earned on our investment portfolio, which increased significantly year-over-year due to the Series B financing and up-front payments pursuant to the AbbVie Agreement and the Janssen Agreement.

Provision for Income Tax

We recorded a provision for income tax expense of $129,000 and $0 for the three months ended March 31, 2019 and 2018, respectively. In the three months ended March 31, 2019, the provision for income tax expense recorded was driven largely by the projected current tax liability associated with upfront collaboration payments received in 2018.

Comparison of the Years Ended December 31, 2017 and 2018

The following table summarizes our results of operations for the years ended December 31, 2017 and 2018:

	Year Ended December 31,		Change	
	2017	2018	$	%
	(in thousands, except percentages)			
Collaboration revenue — related party	$ —	$ 3,358	$ 3,358	*
Operating expenses:				
Research and development	14,103	22,631	8,528	60%
General and administrative	2,826	5,355	2,529	89%
Total operating expenses	16,929	27,986	11,057	65%
Loss from operations	(16,929)	(24,628)	(7,699)	45%
Other income (expense):				
Interest income, net	14	871	857	*
Other expense, net	(5)	(74)	(69)	*
Total other income	9	797	788	*
Net loss	$ (16,920)	$ (23,831)	$ (6,911)	41%

* Percentage not meaningful

Collaboration Revenue

Collaboration revenue increased by $3.4 million for the year ended December 31, 2018 from $0 for the year ended December 31, 2017. The increase was due to the collaboration with AbbVie we executed in October 2018 to advance several oral integrin therapeutics for fibrosis-related indications.

Research and Development

Research and development expense increased by $8.5 million, or 60%, from $14.1 million for the year ended December 31, 2017 to $22.6 million for the year ended December 31, 2018. A significant portion of our research and development costs have been external costs, which we track on a program-by-program basis after a clinical product candidate has been identified. Our internal research and development costs

are primarily personnel-related costs, depreciation, and other indirect costs. The following table summarizes our research and development expense for the years ended December 31, 2017 and 2018:

	Year Ended December 31,		Change	
	2017	2018	$	%
	(in thousands, except percentages)			
External costs by program:				
a_vb_6	$ 2,864	$ 6,763	$ 3,899	136%
a_4b_7	2,133	3,997	1,864	87%
Other early development candidates and unallocated costs	2,230	2,932	702	31%
Total external costs	7,227	13,692	6,465	89%
Internal costs:				
Employee compensation and benefits	5,766	7,754	1,988	34%
Facility and other	1,110	1,185	75	7%
Total internal costs	6,876	8,939	2,063	30%
Total research and development expense	$ 14,103	$ 22,631	$ 8,528	60%

The increase in research and development expense was primarily attributable to the following:

- The $6.5 million increase in external costs primarily related to increased research and preclinical development and manufacturing costs associated with our most advanced product candidate, MORF-720 targeting a_vb_6, and other external research costs associated with our other early development candidates.
- The $2.1 million increase in internal costs was primarily driven by an increase in employee compensation and benefits costs related to increased headcount in our research and development function.

General and Administrative

General and administrative expense increased by $2.5 million, or 89%, from $2.8 million for the year ended December 31, 2017 to $5.3 million for the year ended December 31, 2018.

The increase in general and administrative expense was primarily attributable to an increase of $0.8 million in employee compensation and benefits due to increased headcount and an increase of $1.5 million in professional services and consulting fees primarily due to increases in legal fees related to business development, regulatory and patent costs, accounting and audit fees, and public and investor relations fees due to ongoing business activities, and a $0.2 million increase in other expenses.

Interest Income, Net

Interest income increased by $0.9 million from $0 for the year ended December 31, 2017 to $0.9 million for the year ended December 31, 2018.

The increase in interest income, net was attributable to increased income earned on our investment portfolio, which increased significantly year-over-year due to the Series B financing and up-front payment pursuant to the AbbVie agreement.

Liquidity and Capital Resources

Sources of Liquidity

From inception through March 31, 2019, we have funded our operations with the gross proceeds of $140.0 million from sales of our convertible preferred equity securities and borrowings of $1.0 million under our credit facility with SVB, $100.0 million we received as an up-front, non-refundable payment from our collaboration with AbbVie, $10.0 million we received as an up-front, non-refundable payment from the Janssen Agreement, as well as future research funding from the Janssen Agreement. The following table provides information regarding our total cash, cash equivalents, and marketable securities, each of which are stated at their respective fair values as of December 31, 2017 and 2018 and March 31, 2019:

	December 31,		March 31, 2019
	2017	2018	
	(in thousands)		(in thousands)
Cash	$ 289	$ 225	$ 218
Money market funds	20,461	185,676	42,201
Marketable securities	—	—	143,651
Total cash, cash equivalents, and marketable securities	$ 20,750	$ 185,901	$ 186,070

In March 2016, we entered into a credit facility with SVB for an equipment line of credit of up to $1.5 million to finance the purchase of eligible equipment. Principal and interest payments commenced on January 1, 2017 for a period of 36 months. The loan and security agreement also included a final payment fee equal to 5.0% of the aggregate advances and a pre-payment fee of 0.5% to 1.0%, depending on when the prepayment occurs. In December 2018, we paid the entire balance back to SVB, including a prepayment penalty of 0.5% and terminated the credit facility. We had no balances outstanding due to SVB or any other lender as of March 31, 2019.

In connection with the credit facility, we also issued a warrant to SVB to purchase 39,800 Series Seed convertible preferred units at a purchase price of $0.75268 per unit, which became exercisable for 39,800 shares of Series Seed convertible preferred stock at a purchase price of $0.75268 per share in connection with the Reorganization. The SVB warrant is exercisable immediately and expires on March 30, 2026. Following the completion of this offering, the warrant will be exercisable for 39,800 shares of our common stock at an exercise price of $0.75268 per share.

Cash Flows

The following table provides information regarding our cash flows for the years ended December 31, 2017 and 2018 and three months ended March 31, 2018 and 2019:

	Year Ended December 31,		Three Months Ended March 31,	
	2017	2018	2018	2019
	(in thousands)		(in thousands)	
Net cash (used in) provided by operating activities	$ (15,415)	$ 76,337	(5,426)	188
Net cash (used in) investing activities	(907)	(656)	(231)	(143,670)
Net cash provided by (used in) financing activities	20,261	89,470	(83)	—
Net increase (decrease) in cash and cash equivalents and restricted cash	$ 3,939	$ 165,151	$ (5,740)	$ (143,482)

Net Cash (Used in) Provided by Operating Activities

The use of cash in all periods resulted primarily from our net losses adjusted for non-cash charges and changes in components of working capital. Net cash provided by operating activities was $76.4 million for the year ended December 31, 2018 compared to $15.4 million of cash used in operating activities for the year ended December 31, 2017. The increase in cash provided by operating activities was due to an increase in net loss of $6.9 million for the year ended December 31, 2018 as compared to the year ended December 31, 2017 offset of $98.0 million of cash provided by operating assets and liabilities primarily due to an upfront payment from AbbVie.

Net cash provided by operating activities was $0.2 million for the three months ended March 31, 2019 compared to $5.4 million in cash used in operating activities for the three months ended March 31, 2018. The increase in cash provided by operating activities was primarily due to an increase of $4.3 million in deferred revenue and an increase of $1.1 million in accounts payable, offset by our net loss of $5.2 million.

Net Cash (Used in) Investing Activities

Net cash used in investing activities was $0.7 million for the year ended December 31, 2018 compared to net cash used in investing activities of $0.9 million for the year ended December 31, 2017. Net cash used in investing activities for the year ended December 31, 2018 and 2017 consisted primarily of purchases of equipment.

Net cash used in investing activities was $143.7 million for the three months ended March 31, 2019 compared to net cash used in investing activities of $0.2 million for the three months ended March 31, 2018, an increase of $143.5 million. This increase was primarily due to the purchase of $143.1 million in marketable securities and a net increase of $0.6 million in property and equipment.

Net Cash (Used in) Provided by Financing Activities

Net cash provided by financing activities was $89.4 million during the year ended December 31, 2018 compared to $20.3 million during the year ended December 31, 2017. The cash provided by financing activities for the year ended December 31, 2018 was the result of $90.1 million of net proceeds received from private placements of our convertible preferred stock offset by repayment of debt of $0.7 million. The cash provided by financing activities for the year ended December 31, 2017 was primarily the result of $20.6 million of net proceeds received from private placements of our convertible preferred stock offset by repayment of debt of $0.3 million borrowings under the credit facility.

No cash was used in or provided by financing activities during three months ended March 31, 2019. In the comparable prior year period, $0.1 million in cash was used to repay outstanding debt to SVB.

Funding Requirements

We expect our expenses to increase in connection with our ongoing activities, particularly as we continue research and development, initiate clinical trials, and seek marketing approval for our current and any of our future product candidates. In addition, if we obtain marketing approval for any of our current or our future product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution, which costs we might offset through entry into collaboration agreements with third parties. Furthermore, upon the completion of this offering, we expect to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on acceptable terms, we would be forced to delay, reduce, or eliminate our research and development programs or future commercialization efforts.

We expect that the net proceeds from this offering, together with our existing cash and cash equivalents will enable us to fund our operating expenses and capital expenditure requirements into .

We have based this estimate on assumptions that may prove to be wrong, and we may use our available capital resources sooner than we currently expect. Our future capital requirements will depend on many factors, including:

- the costs of conducting preclinical studies and future clinical trials;
- the costs of future manufacturing;
- the scope, progress, results and costs of discovery, preclinical development, laboratory testing, and clinical trials for other potential product candidates we may develop, if any;
- the costs, timing, and outcome of regulatory review of our product candidates;
- our ability to establish and maintain collaborations on favorable terms, if at all;
- the achievement of milestones or occurrence of other developments that trigger payments under any collaboration agreements we might have at such time;
- the costs and timing of future commercialization activities, including product sales, marketing, manufacturing and distribution, for any of our product candidates for which we receive marketing approval;
- the amount of revenue, if any, received from commercial sales of our product candidates, should any of our product candidates receive marketing approval;
- the costs of preparing, filing and prosecuting patent applications, obtaining, maintaining and enforcing our intellectual property rights, and defending intellectual property-related claims;
- our headcount growth and associated costs as we expand our business operations and research and development activities; and
- the cost of operating as a public company.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interests may be diluted, and the terms of these securities may include liquidation or other preferences that could adversely affect your rights as a common stockholder. Additional debt financing, if available, may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, that could adversely impact our ability to conduct our business.

If we raise additional funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates, or to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Critical Accounting Policies and Significant Estimates

This management's discussion and analysis is based on our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these consolidated financial statements requires us to make judgments and estimates that affect the reported amounts of assets, liabilities, revenues and expenses, and the disclosure of contingent assets and liabilities in our consolidated financial statements. We base our estimates on historical experience, known trends and events, and various other factors that we believe to be reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions. On an ongoing basis, we evaluate our judgments and estimates in light of changes in circumstances, facts, and experience. The effects of material revisions in estimates, if any, will be reflected in the consolidated financial statements prospectively from the date of change in estimates.

While our significant accounting policies are described in more detail in the notes to our consolidated financial statements appearing elsewhere in this prospectus, we believe the following accounting policies used in the preparation of our consolidated financial statements require the most significant judgments and estimates.

Accrued Research and Development Expenses

As part of the process of preparing our consolidated financial statements, we are required to estimate our accrued expenses as of each balance sheet date. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf, and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. The majority of our service providers invoice us monthly in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary. The significant estimates in our accrued research and development expenses include the costs incurred for services performed by our vendors in connection with research and development activities for which we have not yet been invoiced. In certain instances, we prepay for services to be provided in the future. These amounts are expensed as the services are performed.

We base our expenses related to research and development activities on our estimates of the services received and efforts expended pursuant to quotes and contracts with vendors that conduct research and development on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the research and development expense. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or prepaid balance accordingly. Non-refundable advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received rather than when the payment is made.

Although we do not expect our estimates to be materially different from amounts incurred, if our estimates of the status and timing of services performed differ from the actual status and timing of services performed, it could result in us reporting amounts that are too high or too low in any particular period. To date, there have been no material differences between our estimates of such expenses and the amounts incurred.

Equity-Based Compensation

Prior to the Reorganization, we granted incentive units, which we accounted for as equity-classified awards. As part of the Reorganization, the incentive units were exchanged for shares of our common stock and restricted common stock, which we account for as equity-classified awards. In 2018, we granted stock options, which we account for as equity-classified awards.

We measure employee equity-based compensation based on the grant date fair value of the equity-based awards and recognize equity-based compensation expense on a straight-line basis over the requisite service period of the awards, which is generally the vesting period of the respective award. As of January 1, 2018, we made an accounting policy election to recognize forfeitures as they occur upon full retrospective adoption of guidance per Accounting Standard Update ("ASU") No. 2016-09, *Compensation — Stock Compensation*, ("ASU 2016-09"). The adoption of ASU 2016-09 did not have a material impact on our consolidated financial statements. The term "forfeitures" is distinct from "cancellations" or "expirations" and represents only the unvested portion of the surrendered equity-based award. In addition, on January 1, 2018, we adopted, using modified retroactive approach, the guidance of Accounting Standard Update 2018-07, Compensation — Stock Compensation (Topic 718) — Improvements to Nonemployee Share-

Based Payment Accounting and account for awards to non-employees using the grant date fair value without subsequent periodic remeasurement. The adoption of ASU 2018-07 did not have a material effect on our consolidated financial statements.

We recognize compensation expense for equity-based awards granted to non-employees over the related service period of the award. The fair value of the non-employee equity-based awards are established on the grant date and are not subject to re-measurement. Compensation expense to non-employees was not material for the years ended as of December 31, 2017 and 2018 and the three months ended March 31, 2018 and 2019.

We classify equity-based compensation expense in our consolidated statements of operations in the same manner in which the award recipient's salary and related costs are classified or in which the award recipient's service payments are classified. In future periods, we expect equity-based compensation expense to increase, due in part to our existing unrecognized stock-based compensation expense and as we grant additional stock-based awards to continue to attract and retain our employees.

Determination of the Fair Value of Equity-Based Awards

We determine the fair value of restricted common stock awards granted based on the fair value of our common stock. We estimate the fair value of incentive stock option awards and incentive units granted using the Black-Scholes option-pricing model, which uses as inputs the fair value of our common stock or unit and subjective assumptions we make, including the expected stock price volatility, the expected term of the award, the risk-free interest rate, and expected dividends. Due to the lack of a public market for the trading of our common stock and a lack of company-specific historical and implied volatility data, we base the estimate of expected volatility on the historical volatility of a representative group of publicly traded companies for which historical information is available. The historical volatility is generally calculated based on a period of time commensurate with the expected term assumption. We use the simplified method to calculate the expected term for options granted to employees and directors. We utilize this method as we do not have sufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term. For options granted to non-employees, we utilize the expected term. The risk-free interest rate is based on a U.S. treasury instrument whose term is consistent with the expected term of the stock options. The expected dividend yield is assumed to be zero, as we have never paid dividends and do not have current plans to pay any dividends on our common stock.

As there has been no public market for our common units or incentive units to date, the estimated fair value of our common units and incentive units has been approved by our board of directors, with input from management, as of the date of each award grant, considering our most recently available independent third-party valuations of common units and incentive units and our board of directors assessment, with input from management, of additional objective and subjective factors that we believed were relevant and which may have changed from the date of the most recent valuation through the date of the grant. In addition, there has been no public market for our common stock to date. The estimated fair value of our common stock has been determined by our board of directors as of the date of each award grant considering our most recently available independent third-party valuations of common stock and our board of directors' assessment of additional objective and subjective factors that it believed were relevant and which may have changed from the date of the most recent valuation through the date of the grant. These independent third-party valuations were performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants' Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation.* We estimated the value of our equity using the market approach, including the guideline public company method and a precedent transaction method which "backsolves" to a preferred price. We allocated equity value to our common units, incentive units, and convertible preferred units or to our shares of common stock and shares of our convertible preferred stock, as the case may be, using either an option-pricing method, or OPM, or a hybrid method, which is a hybrid between the OPM and the probability-weighted expected return method. The OPM treats common securities and preferred

securities as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the common units and incentive units and common stock have value only if the funds available for distribution to members exceed the value of the preferred security liquidation preference at the time of the liquidity event, such as a strategic sale or a merger. The hybrid method estimates the probability-weighted value across multiple scenarios but uses the OPM to estimate the allocation of value within at least one of the scenarios. In addition to the OPM, the hybrid method considers an initial public offering, or IPO, scenario in which the shares of convertible preferred stock are assumed to convert to common stock. The future value of the common units, incentive units and common stock in the IPO scenario is discounted back to the valuation date at an appropriate risk adjusted discount rate. In the hybrid method, the present value indicated for each scenario is probability weighted to arrive at an indication of value for the common units, incentive units and common stock.

As of August 31, 2017, our third-party valuation report estimated a valuation of our common units of $0.48 per unit, and our incentive units with a threshold price of $0.33 per unit. As of October 31, 2018, our third-party valuation report estimated a value of our common stock of $0.74 per share. As of January 31, 2019, our third-party valuation report estimated a value of our common stock of $1.33 per share.

In addition to considering the results of these third-party valuations, management considered various objective and subjective factors to determine the fair value of our common units, incentive units and common stock as of each grant date, which may be a date later than the most recent third-party valuation date, including:

- the prices of our preferred securities sold to or exchanged between outside investors in arm's length transactions, if any, and the rights, preferences and privileges of our preferred securities as compared to those of our common units, incentive units or common stock, including the liquidation preferences of our preferred securities;
- the progress of our research and development efforts, including the status of preclinical studies and planned clinical trials for our product candidates;
- the lack of liquidity of our equity as a private company;
- our stage of development and business strategy and the material risks related to our business and industry;
- the achievement of enterprise milestones, including entering into collaboration and license agreements;
- the valuation of publicly traded companies in the life sciences and biotechnology sectors, as well as recently completed mergers and acquisitions of peer companies;
- any external market conditions affecting the biotechnology industry, and trends within the biotechnology industry;
- the likelihood of achieving a liquidity event for the holders of our preferred shares, restricted common shares, and common stock, such as an IPO, or a sale of our company, given prevailing market conditions; and
- the analysis of IPOs and the market performance of similar companies in the biopharmaceutical industry.

The assumptions underlying these valuations represent management's best estimates, which involve inherent uncertainties and the application of management judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our equity-based compensation expense could be materially different. Following the completion of this offering, the fair value of our common stock will be determined based on the quoted market price of our common stock.

The following table sets forth by grant date and type of award, the number of incentive units or stock options granted; the per unit strike price of incentive units or the per share exercise price of stock options granted between January 1, 2018 and the date of this prospectus.

Date of Issuance	Type of Award	Number of Units or Shares Subject to Awards/Grants	Per Unit Strike Price or Per Share Exercise Price	Fair Value per Common Unit or Common Share on Grant Date
6/21/2018	Incentive Unit	354,000	$ 0.33	$ 0.48
12/7/2018	Stock Option	999,309	$ 0.74	$ 0.74
12/14/2018	Stock Option	9,418,387	$ 0.74	$ 0.74
4/11/2019	Stock Option	1,522,000	$ 1.33	$ 1.33

Revenue Recognition

As of March 31, 2019, all of our revenue to date had been generated from the AbbVie Agreement and Janssen Agreement. Effective January 1, 2018, we adopted the provisions of ASC Topic 606, *Revenue from Contracts with Customers* ("ASC 606") using the full retrospective transition method.

Under ASC 606, we recognize revenue when our customer obtains control of promised goods or services, in an amount that reflects the consideration which we expect to receive in exchange for those goods or services. To determine the appropriate amount of revenue to be recognized for arrangements determined to be within the scope of ASC 606, we perform the following five steps: (i) identification of the contract(s) with the customer, (ii) identification of the promised goods or services in the contract and determination of whether the promised goods or services are performance obligations, (iii) measurement of the transaction price, (iv) allocation of the transaction price to the performance obligations, and (v) recognition of revenue when (or as) we satisfy each performance obligation. We only apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to our customer.

Identification of the Contracts with the Customers

We evaluate every contract to determine whether it in its entirety or in part represent a contract with a customer, or a collaboration agreement and, based on this determination, apply appropriate accounting guidance.

We account for a contract with a customer that is within the scope of ASC 606 when all of the following criteria are met: (i) the arrangement has been approved by the parties and the parties are committed to perform their respective obligations, (ii) each party's rights regarding the goods or services to be transferred can be identified, (iii) the payment terms for the goods or services to be transferred can be identified, (iv) the arrangement has commercial substance and (v) collection of substantially all of the consideration to which we will be entitled in exchange for the goods or services that will be transferred to the customer is probable.

Identification of the Performance Obligations

The promised goods or services in our collaboration and option arrangements consist of research and development services. The arrangements also have options for additional items (i.e., license rights). Options are considered to be marketing offers and are to be accounted for as separate contracts when the customer elects such options, unless we determine the option provides a material right which would not be provided without entering into the contract. The determination as to whether such options are material rights requires significant management judgment, and management considers factors such as other similar arrangements,

market data and the terms of the contractual arrangement to make such conclusion. Performance obligations are promised goods or services in a contract to transfer a distinct good or service to the customer. Promised goods or services are considered distinct when: (i) the customer can benefit from the good or service on its own or together with other readily available resources and (ii) the promised good or service is separately identifiable from other promises in the contract. In assessing whether promised goods or services are distinct, we consider factors such as the stage of development of the underlying intellectual property, the capabilities of our customer to develop the intellectual property on their own and whether the required expertise is readily available.

Determination of the Transaction Price

We estimate the transaction price based on the amount of consideration we expect to receive for transferring the promised goods or services in the contract. The consideration may include both fixed consideration and variable consideration. At the inception of each arrangement that includes variable consideration, we evaluate the amount of the potential payments and the likelihood that the payments will be received. We utilize either the most likely amount method or expected value method to estimate the transaction price based on which method better predicts the amount of consideration expected to be received. If it is probable that a significant revenue reversal would not occur, the variable consideration is included in the transaction price.

All contingent future payments, which include research, development, regulatory, and sales based royalty payments, have not been considered in the initial analysis, as they are contingent upon option(s) being exercised or are subject to significant risk of achievement.

Allocation of Transaction Price

We allocate the transaction price based on the estimated standalone selling price. We must develop assumptions that require judgment to determine the standalone selling price for each performance obligation identified in the contract. We utilize key assumptions to determine the standalone selling price, which may include other comparable transactions, pricing considered in negotiating the transaction, and the estimated costs. Certain variable consideration is allocated specifically to one or more performance obligations in a contract when the terms of the variable consideration relate to the satisfaction of the performance obligation and the resulting amounts allocated to each performance obligation are consistent with the amounts we would expect to receive for satisfying each performance obligation.

Recognition of Revenue

We recognize revenue as we perform the research and development services based on the costs incurred to date, as such costs have direct relationship between our effort and the progress made towards satisfying its performance obligations to AbbVie. Consideration allocated to material rights is recognized upon exercise or expiration of the related option.

Off-Balance Sheet Arrangements

We did not have, during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under applicable SEC rules.

Contractual Obligations

The following table summarizes our significant contractual obligations by period presented according to the payment due date at December 31, 2018 and March 31, 2019 (in thousands):

As of December 31, 2018	Total	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years
Operating lease obligations[1]	$ 3,879	$ 1,087	$ 2,792	$ —	$ —
Total	$ 3,879	$ 1,087	$ 2,792	$ —	$ —

As of March 31, 2019	Total	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years
Operating lease obligations[1]	$ 3,610	$ 818[2]	$ 2,792	$ —	$ —
Total	$ 3,610	$ 818	$ 2,792	$ —	$ —

[1] Represents future minimum repayments under our non-cancellable operating leases as of December 31, 2018 and March 31, 2019, respectively.

[2] The amounts are for the nine months ending December 31, 2019.

We entered into contracts with a number of third parties, including external CROs, that require us to make upfront payments, some of which may be non-refundable. Under various licensing and related agreements with third parties, we have agreed to make milestone payments and pay royalties to third parties. Pursuant to an exclusive license agreement with Children's Medical Center Corporation, or CMCC, a holder of our common stock, we paid CMCC an annual license maintenance fee of $15,000 in each of 2015 and 2018. In 2018 we amended the agreement and this obligation increased to $80,000 per year, and continues until the agreement is terminated. We will also be responsible for up to $1.3 million of development milestone payments through the first regulatory approval of a licensed product, tiered royalty payments of low single-digit percentages on net sales of licensed products in the event that we realize sales from products covered by the license agreement, and between 10% and 20% of non-royalty income attributable to a sublicense of the CMCC rights. Amounts paid to CMCC are recorded as research and development expense in the statements of operations.

Pursuant to a collaboration agreement with Schrödinger, a holder of our preferred stock, we are responsible to pay Schrödinger up to an aggregate of $950,000 in development milestones on a target-by-target basis and royalty payments of low single-digit percentages on net sales of licensed products.

We enter into agreements in the normal course of business with vendors for preclinical studies, preclinical and clinical supply and manufacturing services, professional consultants for expert advice, and other vendors for other services for operating purposes. We have not included these payments in the table of contractual obligations above since the contracts do not contain any minimum purchase commitments and are cancelable at any time by us, generally upon 30 days prior written notice, and therefore we believe that our non-cancelable obligations under these agreements are not material.

Quantitative and Qualitative Disclosures About Market Risks

We are exposed to market risk related to changes in interest rates. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly

because of our cash equivalents, in the form of a money market fund, and marketable securities which is primarily invested in short-term U.S. Treasury obligations. However, because of the short-term nature of the investments in our portfolio, an immediate one percentage point change in market interest rates would not have a material impact on the fair market value of our investment portfolio or on our financial position or results of operations.

We are not currently exposed to significant market risk related to changes in foreign currency exchange rates; however, we have contracted with and may continue to contract with foreign vendors that are located in Europe. Our operations may be subject to fluctuations in foreign currency exchange rates in the future.

Inflation generally affects us by increasing our cost of labor. We do not believe that inflation had a material effect on our business, financial condition or results of operations during the years ended December 31, 2017 or 2018 or the three months ended March 31, 2019.

Emerging Growth Company and Smaller Reporting Status

We are an "emerging growth company," or EGC, under the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. Section 107 of the JOBS Act provides that an EGC can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act, for complying with new or revised accounting standards. Thus, an EGC can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of delayed adoption of new or revised accounting standards and, therefore, we will be subject to the same requirements to adopt new or revised accounting standards as private entities.

As an EGC, we may take advantage of certain exemptions and reduced reporting requirements under the JOBS Act. Subject to certain conditions, as an EGC:

- we will present only two years of audited financial statements and only two years of related Management's Discussion and Analysis of Financial Condition and Results of Operations;
- we will avail ourselves of the exemption from providing an auditor's attestation report on our system of internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act;
- we will avail ourselves of the exemption from complying with any requirement that may be adopted by the Public Company Accounting Oversight Board, or PCAOB, regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements, known as the auditor discussion and analysis;
- we will provide reduced disclosure about our executive compensation arrangements; and
- we will not require nonbinding advisory votes on executive compensation or stockholder approval of any golden parachute payments.

We will remain an EGC until the earliest of (i) the last day of the fiscal year following the fifth anniversary of the completion of this offering, (ii) the last day of the fiscal year in which we have total annual gross revenues of $1.07 billion or more, (iii) the date on which we have issued more than $1.0 billion in non-convertible debt during the previous rolling three-year period, or (iv) the date on which we are deemed to be a large accelerated filer under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

We are also a "smaller reporting company," meaning that the market value of our stock held by non-affiliates plus the proposed aggregate amount of gross proceeds to us as a result of this offering is less than $700.0 million and our annual revenue is less than $100.0 million during the most recently completed fiscal year. We may continue to be a smaller reporting company after this offering if either (i) the market value of our stock held by non-affiliates is less than $250.0 million or (ii) our annual revenue is less than $100.0 million during the most recently completed fiscal year and the market value of our stock held by non-affiliates is less than $700.0 million.

If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Recent Accounting Pronouncements

We have reviewed all recently issued standards and have determined that, other than as disclosed in Note 2 to our consolidated financial statements appearing elsewhere in this prospectus, such standards will not have a material impact on our financial statements or do not otherwise apply to our operations.

Income Taxes

We have incurred NOLs from inception. At December 31, 2018, we had federal and state NOL carryforwards of approximately $34.7 million and $21.4 million, respectively, available to reduce future taxable income, which expire beginning in 2036. As of December 31, 2018, we also had federal and state research and development tax credit carryforwards of approximately $0.6 million and $0.4 million respectively, to offset future income taxes, which will begin to expire beginning in December 2031. Our NOL carryforwards are subject to review and possible adjustment by the appropriate taxing authorities. These NOL carryforwards that may be utilized in any future period may be subject to limitations based upon changes in the ownership of our stock in a prior or future period. We have not quantified the amount of such limitations, if any.

As required by ASC 740, our management has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets, which are composed principally of NOL carryforwards and research and development credit carryforwards. Management has determined that it is more likely than not that we will not realize the benefits of our federal and state deferred tax assets, and, as a result, a valuation allowance of $8.9 million and $14.7 million has been established at December 31, 2017 and 2018, respectively. The change in the valuation allowance was $3.4 million and $5.8 million for the years ended December 31, 2017 and 2018.

During the three months ended March 31, 2019, we recorded $129,000 in income tax expense. There was no comparable amount in the same period in 2018.

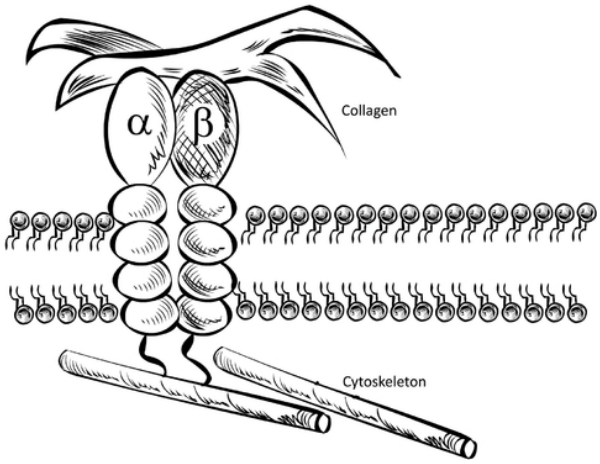
BUSINESS

Overview

We are a biopharmaceutical company applying our proprietary insights into integrins to discover and develop a pipeline of potentially first-in-class oral small-molecule integrin therapeutics. Integrins are a target class with multiple approved injectable blockbuster drugs for the treatment of serious chronic diseases, including autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer. To date, no oral small-molecule integrin therapies have been approved by the U.S. Food and Drug Administration, or FDA. Despite significant unsuccessful efforts, we believe tremendous untapped potential remains for us to develop oral integrin therapies. We created the Morphic integrin technology platform, or MInT Platform, by leveraging our unique understanding of integrin structure and biology to develop novel product candidates designed to achieve the potency, high selectivity and pharmaceutical properties required for oral administration. We are advancing our preclinical pipeline, including our lead wholly-owned program for a_4b_7-specific integrin inhibitors affecting inflammation into clinical development for the treatment of inflammatory bowel disease, or IBD. We are also developing our most advanced product candidate, MORF-720, a selective oral a_vb_6-specific integrin inhibitor into clinical development for the treatment of idiopathic pulmonary fibrosis, or IPF, in collaboration with AbbVie Inc., or AbbVie. We intend to advance our a_4b_7 program and MORF-720 toward Investigational New Drug applications, or INDs, by the middle of 2020 and as early as the end of 2019, respectively. Beyond our current targets, we are using our MInT Platform to create a broad pipeline of programs across a variety of therapeutic areas, all of which aim to harness the potential of inhibition or activation.

Integrins are a family of transmembrane cell adhesion proteins that localize cells in specific tissues and then modulate cellular functions in response to these environments. They are the only receptors that can "integrate" extracellular and intracellular stimuli. Integrins contain two subunits: one protein in the integrin dimer comes from the a family and one from the b family. Combinations of various a and b subunits form 24 integrins that are subdivided across four receptor subgroups: those on leukocytes, and those that recognize RGD-peptide, collagen and laminin ligands. Their activity is modulated by the complexity of their conformational states. Tissues have distinct integrin expressions and these integrins play a role in autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer. We believe the diversity and specificity of integrin involvement in a broad range of diseases make this set of molecules ideal drug targets.

Integrin Model



We believe that our discovery platform enables us to be the only company working across the entire 24-member integrin target family. Our MInT Platform consists of three unique capabilities:

- **Proprietary ability to determine integrin structures.** Using our protein constructs, cell lines and know-how, we have elucidated more than 150 proprietary structures for clinically important targets across nine of the 24 integrins.
- **Tunable product candidate design engine.** We have built a library of optimized compounds using sophisticated medicinal chemistry capabilities and biological assays that allows us to tune highly potent and selective integrin inhibitors and activators into product candidates for preclinical and clinical development. Our ability to generate product candidates from our tunable product engine is accelerated by our exclusive computational design collaboration with Schrödinger.
- **Biology and disease translation capability.** Our sophisticated and comprehensive suite of biologic tools includes a gene and protein expression atlas, a single-cell resolution profiling of human tissues from diseases of interest and development of biomarkers, which allow us to assess target engagement and pharmacodynamic activity in the disease of interest.

The initial focus of our therapeutic product candidates is a target class in areas of high unmet medical need. Our lead wholly-owned program focuses on the advancement of an oral therapy targeting a_4b_7 integrin receptor for the treatment of IBD, or more specifically, ulcerative colitis and Crohn's disease. Vedolizumab, an intravenously administered therapeutic antibody targeting a_4b_7, is approved by the FDA and other foreign regulatory authorities for late-stage treatment of both diseases and generated worldwide sales of $1.9 billion in fiscal year 2018. We believe that there is a significant unmet need for an oral therapy with the safety and efficacy of a biologic such as vedolizumab. We have identified potent and selective oral small molecules targeting a_4b_7 and expect to submit an IND in the middle of 2020 for our a_4b_7 program. We also anticipate reporting clinical proof of concept data in 2021.

We are progressing our most advanced product candidate, MORF-720, a selective oral first-in-class a_vb_6-specific integrin inhibitor, into clinical development for the treatment of IPF, a disease with high unmet medical need. In preclinical models of this disease, we observed that administration of our a_vb_6 inhibitor

was associated with local inhibition of TGF-b, a clinically prominent anti-inflammatory cytokine, and anti-fibrotic effect in tissues. Furthermore, we did not observe systemic TGF-b inhibition, which is associated with immune dysfunction. As part of our collaboration with AbbVie, they have an option to license this program at IND for future development and commercialization, and if this option is exercised, we are entitled to a license fee of $20.0 million, as well as potential milestone payments and royalties. We expect an IND application to be submitted for our a_vb_6 product candidate for the treatment of IPF as early as end of 2019. We also anticipate positron emission tomography (PET) imaging data in 2020, as well as potentially filing an IND for a liver indication in 2021.

Based on the broad therapeutic potential of integrin inhibition and activation and the productivity of our MInT Platform, we have made the strategic decision to retain full commercial rights to certain compounds and indications in our development pipeline while selectively collaborating on the development of those that do not match our current resources or therapeutic focus. In October 2018, we entered into an agreement with AbbVie designed to advance a number of our oral integrin programs for fibrosis-related indications, which included an upfront payment of $100.0 million to us to provide research and development activities, and we provided AbbVie with exclusive license options on product candidates directed at a number of targets. In February 2019, we entered into an agreement with Janssen Pharmaceuticals, Inc., or Janssen, to develop novel integrin therapeutics. We are eligible to receive up to $729 million in the aggregate from the collaboration in upfront, option and milestone payments, as well as royalties on net sales. We believe these collaborations further validate the transformational potential of our MInT Platform.

We were founded in 2014 by Dr. Timothy A. Springer of Harvard Medical School and Boston Children's Hospital, a world-renowned immunologist and biophysicist who discovered integrins. He established the importance of integrin conformations in modulating disease activity. Today, pursuant to an exclusive license from the Children's Medical Center Corporation, or the Springer Laboratory, our MInT platform is powered by these initial insights, together with our proprietary knowledge of integrin conformations, affinity regulation and dynamics. Together, this enables us to discover novel product candidates that bind and revert disease-specific integrin conformations to a non-disease physiologic state.

We have assembled an experienced management team, board of directors and scientific advisory board with specialized expertise in integrin therapies. They collectively bring extensive experience in discovering, developing and commercializing therapeutics, having worked at companies such as Biogen Inc., Cubist Pharmaceuticals, Inc., Gilead Sciences, Inc., Merck & Co. and Pfizer Inc.

Since our inception, we have raised $248 million through equity financings and collaborations. Our investors include AbbVie Ventures, EcoR1 Capital Fund, Invus, Novo Holdings A/S, Omega Funds, Pfizer Ventures, Polaris Partners, Schrödinger, Inc., ShangPharma Investment Group Limited, S.R. One, Limited, Dr. Timothy A. Springer, and our collaborators are AbbVie, Janssen and Schrödinger.

Our Strategy

Our goal is to utilize our MInT Platform to discover and develop potentially first-in-class oral small-molecule integrin therapeutics. We believe our platform has the potential to transform the treatment paradigm for patients suffering from a broad range of serious chronic diseases. The key tenets of our business strategy to achieve this goal include:

- ***Establishing orally available integrin modulators as a new treatment for serious chronic diseases, including autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer.*** We are leveraging our MInT Platform to create a new class of oral integrin-targeted therapeutics to treat diseases where integrins are dysregulated and a potential benefit for oral therapies exists. We have prioritized our initial development efforts on diseases with established clinical endpoints and biomarkers, which we believe will enable us to more rapidly achieve clinical proof of concept. We are advancing our lead wholly-owned program for a_4b_7-specific integrin inhibitors into clinical development for the treatment

of IBD. We are also developing our most advanced product candidate, MORF-720, a selective first-in-class a_vb_6-specific integrin inhibitor of the growth of fibrotic tissue in the lung, into clinical development for the treatment of IPF. We intend to advance our a_4b_7 program and MORF-720 toward IND submissions by the middle of 2020 and as early as the end of 2019, respectively.

- ***Leveraging our proprietary MInT Platform and knowledge base to grow our pipeline of novel integrin therapeutics.*** Our comprehensive MInT Platform, coupled with our development capabilities, have enabled us to build a pipeline of novel product candidates targeting chronic diseases caused by integrin dysregulation. We intend to expand our pipeline by unlocking the therapeutic potential of the four integrin subgroups to treat diseases with high unmet medical need and to potentially expand our current product candidates into new indications.

- ***Continuing to drive innovation across our MInT Platform.*** We intend to extend our leading position in the field of integrin medicine by continuing to develop and incorporate platform innovations that can further broaden the potential therapeutic reach of our oral integrin programs. Our key focus areas include iteratively expanding the breadth of our structural knowledge in crystallography through technological investments, broadening our library of conformationally-specific integrin chemotypes and deepening our fundamental understanding of integrin disease biology. We believe that as we further expand our knowledgebase we will be able to iteratively grow our platform and deepen our understanding of additional integrin targets.

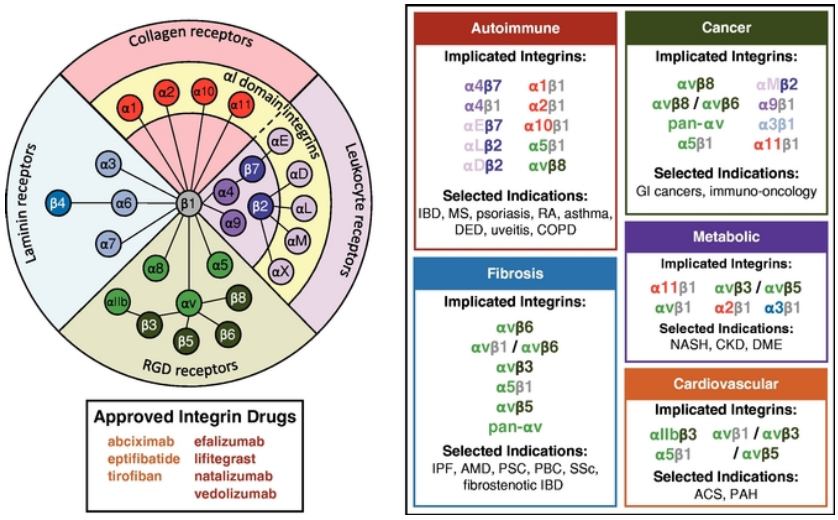
- ***Independently commercializing our products, if approved, in indications and geographies where we believe we can realize maximum value.*** We plan to independently advance those product candidates that we believe have well-defined clinical and regulatory approval pathways, and that we believe we can commercialize successfully, if approved. We may also seek to form strategic collaborations around certain targets, product candidates or disease areas that we believe could benefit from the resources of either larger biopharmaceutical companies or those specialized in a particular area. Our current collaborations with AbbVie and Janssen exemplify various aspects of this strategy.

Our Focus — Integrin Receptors

Integrins are the only receptors in the human body that use both intracellular and extracellular ligands to transmit signals both from inside of the cell to the outside of the cell and from the outside of the cell to the inside of the cell. Reciprocally, these states are regulated by tensile forces transmitted through integrins when they bind to extracellular ligands and the intracellular cytoskeleton. This bi-directional signaling ability allows integrins to affect virtually every aspect of cell and organ homeostasis. Consequently, the dysregulation of integrin signaling is associated with many human diseases including autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer.

Integrin receptors are evolutionarily conserved. Integrins exist as paired combinations of 18 a and eight b subunits resulting in 24 known heterodimers. These pairings give integrins their unique abilities to recognize their ligands and modulate cellular function in specific ways. Integrins are subdivided into those on leukocytes, and those that recognize RGD-peptide, collagen and laminin ligands. They regulate numerous aspects of cell biology and physiology including: leukocyte trafficking, activation of platelets and leukocytes, activation of growth factors such as TGF-b, cell adhesion to the basement membrane and extracellular matrix, and retention or adhesion strengthening of cells within tissues. This diverse set of functions makes

them actionable targets across a broad range of human diseases based on preclinical modeling or clinical establishment. The figure below summarizes the 24-member integrin family and areas of clinical relevance:



Integrins as a Therapeutic Target Family

Integrins have long been recognized as drug targets. In the 1980s, the therapeutic interrogation of integrins focused on the RGD integrin, $a_{IIb}b_3$. When $a_{IIb}b_3$ on platelets is activated, it binds to fibrin, which bridges it to adjacent platelets and leads to clot formation. As the molecular details establishing the essential role of $a_{IIb}b_3$ in platelet aggregation emerged, it became clear that inhibition of its ligand binding function would be antithrombotic. In 1994, abciximab (marketed as Reopro) became the first approved integrin therapy for patients undergoing percutaneous transluminal coronary angioplasty, followed by the approval of tirofiban (marketed as Aggrastat) and eptifibatide (marketed as Integrilin).

The next stage of development of integrins as drug targets has focused on integrin receptors on leukocytes. These therapies modulate autoimmunity by inhibiting the ability of activated immune cells, including T-cells, to enter chronically inflamed tissues. Four approved integrin medicines belong to this category:

- Efalizumab (marketed as Raptiva), an injectable antibody inhibitor of a_Lb_2, approved by the FDA in 2003 for the treatment of chronic moderate to severe psoriasis;
- Natalizumab (marketed as Tysabri), an infusible antibody inhibitor of a_4b_1, approved by the FDA in 2004 for the treatment of relapsing forms of multiple sclerosis and in 2008 for the treatment of moderate to severe active Crohn's disease;
- Vedolizumab (marketed as Entyvio), an infusible antibody inhibitor of a_4b_7, approved by the FDA in 2014 for the treatment of moderate to severe active ulcerative colitis or Crohn's disease; and
- Lifitegrast (marketed as Xiidra), a topical small-molecule inhibitor of a_Lb_2, approved by the FDA in 2016 for the treatment of keratoconjunctivitis sicca.

According to Evaluate Pharma, these autoimmune therapies were estimated to have achieved combined annual sales in their respective 2018 fiscal years of approximately $4.6 billion.

Development Challenges of Oral Integrin Modulators

The infusible, injectable or topical nature of these therapies has limited their utility. To address the limitations of these therapies, the pharmaceutical industry has invested significant resources in discovering and developing oral systemic integrin therapies. For $a_{IIb}b_3$ alone, six different compounds (roxifiban, sibrafiban, orbofiban, xemilofiban, lefradafiban, lotrafiban) were advanced into registrational Phase 3 clinical trials. Disappointingly, the results of these trials showed these oral systemic inhibitors of $a_{IIb}b_3$ increased vascular death in patients with acute coronary syndrome. The reason for these failures took another decade to establish. We now know that all failed oral inhibitors stabilized the active integrin conformation and promoted ligand signaling if they were not potent enough to maintain full active site binding. These drawbacks resulted in greater platelet aggregation and an increased rate of adverse events.

Additionally, the unexpected disease-activating activity of oral leukocyte integrin inhibitors was observed during a Phase 2 development of firategrast, an oral non-selective inhibitor of a_4b_1 and a_4b_7, where the symptoms in the patients with multiple sclerosis were exacerbated when firategrast was administered in non-saturating doses. This resulted in an increase in lesions and an increased rate of adverse events. The development of this compound was subsequently halted.

Our Platform and Approach

We believe that our MInT Platform allows us to address and overcome the challenges faced by developers of first-generation oral integrin-targeted therapeutics.

We initially focused on developing product candidates with a target class for areas of high unmet medical needs including:

- a_4b_7 and a_4b_1, which are established targets for autoimmune diseases; their mechanism of action and the benefits and risks of their inhibition are well understood; and
- certain a_v integrins that have a preclinically well-characterized mechanism of action through the activation of TGF-b, a clinically important anti-inflammatory cytokine dysregulated in many human pathologies.

To date, we have not tested any of our product candidates in any clinical studies, and we currently only have pre-clinical data regarding oral bioavailability of our product candidates.

Our understanding of the mechanism of integrin receptor activity, modulated by complex conformations and signaling, is unique and allows us to discover both inhibitors and activators across the integrin receptor target family. Our capability has been validated by our advancement of a_vb_6 and a_4b_7 programs, as well as our collaborations with AbbVie and Janssen. Our MInT Platform consists of three major components:

- Proprietary ability to determine integrin structures;
- Tunable product candidate design engine; and
- Biology and disease translation capability.

Leveraging our deep understanding of integrin conformation and molecular modes of action is a key element of our strategy to identify product candidates. These receptors undergo large conformational changes as shown in Figure 1 resulting in both inactive (bent-closed and extended-closed) and activated states of the receptor (extended-open). In the bent-closed form, the top portion of the integrin, formed by both a and b subunits, folds in half so that the top and lower half associate with each other (Figure 1 left) rendering the integrin inactive. For the integrin to be active, the extended-close state (Figure 1 middle) extends at the a and b mid-leg on the cell surface to render an extended open state (Figure 1 right). As shown with multiple integrins, the bent-closed and extended-closed conformations have low affinities for ligand, while depending on the integrin, the extended-open conformation is 700 to 5,000-fold higher in affinity for ligand. These changes in integrin conformation and affinity function to transmit bi-directional signals, enabling

communication of the cell expressing the integrin on its surface and the extracellular matrix or ligands on other cells.

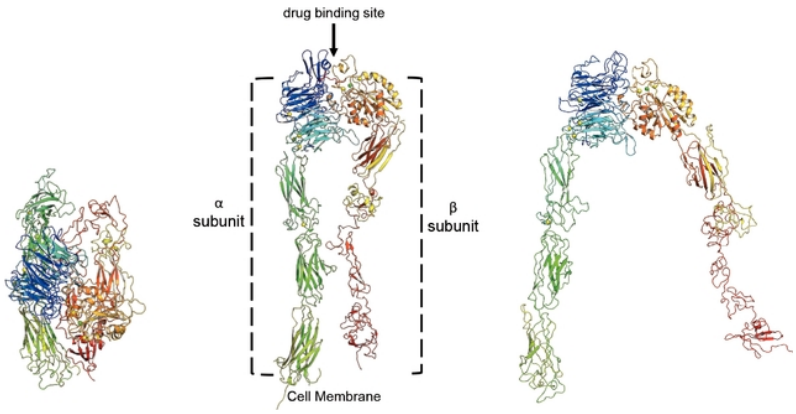


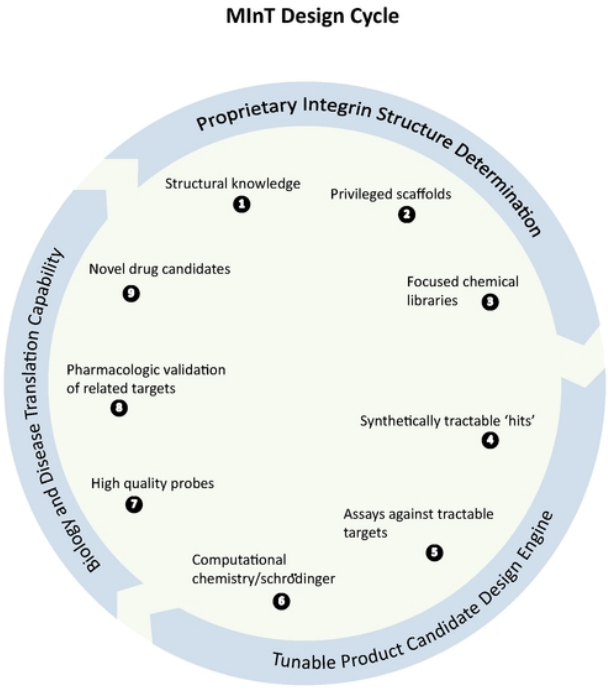
Figure 1:Integrin dynamic conformational states. Left — bent-closed inactive form of the integrin heterodimer pair, Middle — extended-closed inactive, and Right — extended-open active.

Our novel MInT Platform is rooted in our structural biology capability based on deep insights into control of complex integrin conformational states. Dr. Springer characterized an initial set of small molecules to lock specific integrin conformations and we have used and advanced this knowledge to optimize the pharmacology of our oral integrins. We design our compounds to recognize integrin conformational states that are physiologic dysregulated in disease. Binding of our compounds to integrins promotes the integrin to adopt a structure that is characteristic of healthy tissue and stops disease specific integrin signaling. We believe past attempts to develop small molecules targeting integrins have in part failed due to a lack of sufficient understanding of these conformational changes and their impact on disease. We believe our MInT Platform has positioned us to apply our deep understanding of the biologic underpinnings of diseases linked to integrin dysfunction to develop a pipeline of novel integrin therapeutics.

The Morphic Integrin Technology (MInT) Platform

Given that the integrin target family consists of structurally and functionally related proteins, each cycle of the MInT Platform yields chemistry assets and biological data in our programs of interest while in parallel furthering our understanding of the structure and function of new integrin complexes. We believe this results in a rapid strategic compounding of knowledge and assets with each turn of the MInT design cycle. Our a_4b_7 program produced its first development candidate over three years after program initiation. Our a_vb_6 program took only two years to achieve the same goal, which we believe was due in part to insights we had gained on chemical features that optimized oral bioavailability, clearance and metabolic stability. The chemotypes and initial medicinal chemistry hits we discover become tools and compounds that can further our knowledge base around each individual integrin, which also extends to related integrins. For example, discovery efforts in a_vb_6 led to starting points for a_vb_1, a_vb_8 and additional targets, directly enabling new programs and supporting collaboration efforts.

As shown in the graphic below, the iterative MInT design cycle consists of nine steps based on the three pillars of our MInT Platform: our proprietary ability to determine integrin structures, our tunable product candidate design engine, and our biology and disease translation capability.



Proprietary ability to determine integrin structures

We believe that an understanding of protein crystal structures enables more effective product candidate design. Integrins are difficult to characterize structurally because they are composed of many flexible domains and interdomain linkers (see Figure 1). Our unique position of integrin structural knowledge and cell lines, and access to proprietary protein reagents and know-how has allowed us to elucidate more than 150 proprietary structures for clinically important targets across nine of the 24 integrins. Our novel approach is based on combining our deep understanding of structural biology and how integrin protein conformation regulates function in disease. An example of this is in our a_4b_7 program where the crystal structure of the drug binding site enables the design of novel ligands that bind at the interface of the a and b subunits (Figure 2). This critical information at the molecular level directs our research to unlock the potential of this family of receptors and develop small molecules for targeting specific conformations of the integrin receptors.

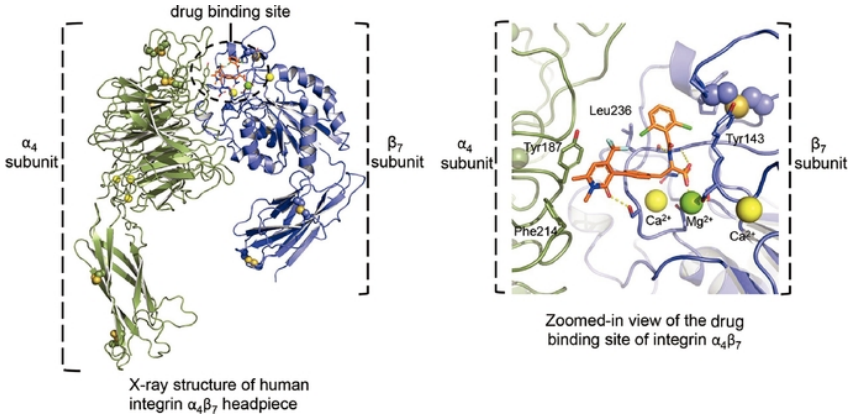


Figure 2: Left — X-ray crystal structural of the top portion of the heterodimer or headpiece of the human $\alpha_4\beta_7$ integrin receptor with the α-subunit on the left and β-subunit on the right. The drug binding site for this receptor is at the interface of the α and β subunits. Right — Zoomed in view of the drug binding site showing the key interactions responsible for regulation of protein conformation in this integrin. Data for structural rendering from: Yu, Y., Zhu, J., Mi, L.Z., Walz, T., Sun, H., Chen, J.-F., Springer, T.A. (2012). Structural specializations of $\alpha_4\beta_7$ an integrin that mediates rolling adhesion. J. Cell Biol. 196, 131-146.

Tunable product candidate design engine

Proprietary Chemistry: We have significant know-how in the development of molecules that stabilize specific integrin receptor conformations, which supports our novel approach to the identification of oral integrin inhibitors. Today, our small molecule chemical library contains over 6,000 uniquely designed integrin modulators (inhibitors and activators), which continues to grow, and our drug design technology leverages our proprietary understanding of integrin target dynamics. When coupled with our deep understanding of the molecular mode of action of specific integrins, we believe we can design appropriate chemotypes for each integrin function. Further optimization of library compounds, combined with excellence in medicinal chemistry, enables the identification of potent, selective oral small molecule product candidates.

Exclusive Schrödinger Computational Chemistry Collaboration: We have a collaboration with Schrödinger, a leader in chemical simulation and *in silico* drug discovery, that is exclusive as to integrins. We believe this collaboration enables us to undertake accelerated drug discovery through design, iteration and optimization of leads using a variety of next-generation physics-based computational technologies. Our collaboration with Schrödinger enables us to design molecules with atomic precision utilizing advanced structure-guided drug design technology.

Our In Vitro Integrin Assay Panels: To identify novel inhibitors that stabilize disease-relevant receptor conformations, we have established a suite of robust *in vitro* assays that cover a majority of integrin family members. These proprietary in-house screening assays enable biochemical and functional characterization of potency and selectivity within the integrin family, serving as powerful tools in different stages of the drug design process.

Biology and disease translation capability

The MInT Platform is built upon a deep understanding of integrin biology in human diseases, including integrin tissues and a cell expression atlas. We have built a sophisticated and comprehensive suite of *in vitro*, *ex vivo*, and disease-specific *in vivo* assays designed to evaluate the pharmacological effects of

integrin modulation and to gain additional insights into their mechanism of action. The biological learnings from these assays have the potential to accelerate our work across multiple integrin discovery programs. We hope to strategically translate preclinical observations into our clinical development plans. These, along with our growing capabilities in pharmacokinetic and pharmacodynamic modeling, have enabled our discovery of integrin inhibitors that have the potential to impact human diseases of autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer.

Our Pipeline Programs

We have conducted an analysis of opportunities for integrin inhibition in human disease on the basis of validating biology, safety, technology readiness and development feasibility. We have identified a number of actionable integrin targets across all four integrin families, and our initial focus is in high unmet medical need areas of autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer.

The following table summarizes key information about our current product candidates:

	Name	Integrin Target	Modality	Indication(s)	Stage of Development	Product Rights
Leukocyte	MR β7 #1 MR β7 #2	$\alpha_4\beta_7$	Oral Inhibitor	• Ulcerative Colitis • Crohn's Disease • Eosinophilic Esophagitis	• IND-enabling studies • Intended IND application submission by the middle of 2020	Morphic
RGD	MORF-720	$\alpha_v\beta_6$	Oral Inhibitor	• Idiopathic Pulmonary Fibrosis	• IND-enabling studies • Intended IND application submission as early as the end of 2019	AbbVie
	MR β6 #2	$\alpha_v\beta_6$	Oral Inhibitor	• Primary Sclerosing Cholangitis • Nonalcoholic Steatohepatitis	• Non-Clinical	Morphic AbbVie

(1) We have neither applied for, nor received, FDA approval for any of our product candidates to date.

In addition to our product candidates, we are also advancing discovery stage assets in the following areas:

RGD	$\alpha_v\beta_1$	Oral Inhibitor	Fibrosis	Discovery	Morphic
	TGF-β Activation	Oral Inhibitor	Gastrointestinal cancers	Discovery	Morphic
	TGF-β Activation	Oral Inhibitor	Fibrosis	Discovery	AbbVie
Other	Undisclosed targets, including αI Domain Integrins	Oral Modulator	Undisclosed	Discovery	Janssen

Our Lead Product Candidates and Additional Programs

Our a_4b_7-specific Integrin Inhibitor for Autoimmune Inflammation

We are advancing our a_4b_7 integrin program as a treatment for ulcerative colitis and Crohn's disease. Current medical management strategies focus on treating disease relapses and prolonging remission with immunomodulators and monoclonal antibody therapies. We believe our oral integrins have the potential, if approved, to offer a targeted and more convenient method of treatment for patients suffering from chronic gastrointestinal and gastroesophageal inflammatory diseases.

Inflammatory Bowel Diseases

IBD is a group of chronic autoimmune and inflammatory conditions of the gastrointestinal tract that can have periods of relapse or remittance. Ulcerative colitis and Crohn's disease are the principal sub-types of IBD. In ulcerative colitis, the lining of the colon, or large intestine, becomes inflamed, resulting in the formation of ulcers, which may subsequently lead to bleeding and diarrhea. In Crohn's disease, inflammation may be presented segmentally, affecting some areas of the gastrointestinal tract while leaving

other areas unharmed. According to a report by the Crohn's and Colitis Foundation, as of November 2014, there were approximately 907,000 people living with ulcerative colitis and 780,000 with Crohn's disease in the United States. The disease incidence is approximately 38,000 new cases per year of ulcerative colitis and 33,000 of Crohn's disease in the United States. According to Evaluate Pharma, as of December 31, 2018, the IBD market is estimated to be approximately $17.5 billion.

The mainstays of therapy over many years have been oral and topical salicylates and glucocorticoids, and various immunosuppressive agents. Anti-integrin antibody therapy for IBD was first introduced with the approval of the a_4 integrin inhibitor natalizumab for Crohn's disease, an indication approved following its initial approval for multiple sclerosis. Natalizumab therapy is associated with, and carries a black box warning for, progressive multifocal leucoencephalopathy, or PML, related to its a_4b_1 inhibitory activity, which has limited its use in Crohn's disease. PML is a rare and often fatal viral disease characterized by progressive damage of the white matter of the brain at multiple locations. Vedolizumab, a monoclonal antibody inhibitor of the integrin a_4b_7, is approved for the induction and maintenance of remission in late-line ulcerative colitis, and does not carry a black box warning. Vedolizumab is also approved as a late-line option for Crohn's disease.

Overview of Pathway and Target Biology

Integrin a_4b_7 binds to mucosal addressing cell adhesion molecule, or MAdCAM, which is expressed at a high level almost exclusively on the endothelial cells of the gut. Blockade of this interaction prevents immune cell entry into inflamed tissue in the gut and has been shown to be effective in treating IBD, as evidenced by the approval of vedolizumab.

Our Solution

We have generated oral small-molecule integrin therapeutics targeting a_4b_7 intended to treat patients with ulcerative colitis and Crohn's disease. Our strategy is driven by our ability to discover oral therapies and our knowledge of how to minimize off-target risk of inhibiting a_4b_1, which is implicated in PML. We believe this program represents an example of a target class with opportunities to differentiate from established therapies, utilizing our MInT Platform. We believe that safe and effective oral therapies have the potential to transform the lives of IBD patients in two distinct ways: (i) as an earlier line of therapy, and (ii) in combination with other agents in the IBD landscape.

In preclinical studies, our a_4b_7 inhibitor molecules have exhibited high potency and selectivity for a_4b_7, good oral absorption and pharmacokinetic properties suitable for twice daily dosing. We have completed preclinical studies of multiple a_4b_7 inhibitors in which we established pharmacological proof of concept, including observed effects on T cell trafficking similar to a comparator a_4b_7 antibody, DATK-32 (a rodent surrogate of vedolizumab). We have initiated IND-enabling studies and expect an IND application to be filed in the middle of 2020.

Preclinical Data, Pharmacology and Biomarker Data

Using our proprietary MInT Platform, we have designed a_4b_7 small-molecule inhibitors that are potent and have high selectivity for a_4b_7 relative to other integrins, including a_4b_1, as assessed by a suite of *in vitro* assays. Table 1 below shows measurements of the potency of two product candidates, MRb_7 #1 and MRb_7 #2, as assessed in our cell adhesion assays, as compared to reference products vedolizumab and natalizumab, as well as AJM-300, a product candidate being developed by a third party. We determined all of these potencies in our laboratories. The cell adhesion assay evaluated the ability of a_4b_7 to bind to its ligand MAdCAM, and a_4b_1 to its ligand VCAM *in vitro*. These assays have been shown to be useful in discovering drug candidates for IBD. IC50 values are commonly accepted measurements of drug potency.

Both MR b7#1 and MR b7#2 have been observed to be highly potent a_4b_7 inhibitors with over 760-fold selectivity in our cell adhesion assay as compared to a_4b_1.

	Potency IC_{50} [nM]		
	a_4b_7 MadCAM	a_4b_1 VCAM	a_4b_1 / a_4b_7 Selectivity Ratio
Vedolizumab	0.03	> 50,000	—
Natalizumab	0.16	0.14	0.9
AJM-300	138	770	5.6
MRb_7 #1	1.1	3,633	3,303
MRb_7 #2	3.7	2,813	760

Table 1: Potency and selectivity data for Morphic product candidates compared to approved products and a product candidate in development by a third-party. The activity of MR b7#1 and MR b7#2 to inhibit the binding of integrins to cell adhesion molecules (MadCAM and VCAM) was evaluated in the cell binding assay using RPMI8866 cell lines. The 50% inhibitory concentration (IC_{50}) was expressed as the average of multiple independent experiments.

The *in vivo* activity of our a_4b_7 inhibitors was also evaluated in a single dose acute pharmacodynamic model, where the impact of blocking the a_4b_7 integrin on the trafficking of T lymphocytes to the gut was assessed in mice. The procedure of the T lymphocyte homing uses fluorescently labelled TK-1 cells, which expresses high level of a_4b_7 integrin on the surface and an *n* of 5 animals per group. A number of our compounds, including our product candidates (MRb7 #1 and MRb7 #2), have been evaluated in this assay to assess dose response (Figure 3). We observed a statistically significant response at all doses tested, and at the highest dose tested with both compounds, we observed our compounds to be as potent as DATK32, a mouse surrogate of the a_4b_7 antibody vedolizumab. In Figure 3 below, the right panel shows dose-dependent inhibition of the carboxyflorescein succinimidyl ester, or CFSE, labeled T cells homing to mesenteric lymph nodes observed with our small molecule a_4b_7 inhibitors and DATK32, a mouse surrogate of vedolizumab, in the assay with an *n* of 5 animals per group. All treatment groups showed a statistical significance of ***p<0.0001 compared to vehicle, using a one-way analysis of variance (ANOVA), followed by Bonferroni's multiple-comparison test. Both compounds exhibited good cell permeability *in vitro,* resulting in oral exposure in multiple preclinical models (MR b7#1 rat = 39%, dog = >100% and MR b7#2 rat = 28%, dog = 57%). We are progressing both a_4b_7 candidates through IND-enabling studies and, based on their properties, we intend to advance one or both candidates into clinical development.

Figure 3: The panel on the left shows the mechanism of the a_4b_7-expressing lymphocytes in IBD. The a_4b_7-expressing lymphocytes traffic to the gut and adhere to MAdCAM, followed by extravasation and migration to the inflammation site. The panel on the right shows the results of the in vivo assay to detect activity of our product candidates as compared to a mouse surrogate of vedolizumab.

Translational biomarkers such as receptor occupancy, or RO, have been validated as a pharmacodynamics marker in preclinical studies and early clinical trials of vedolizumab. When a product candidate binds to a_4b_7, it occupies the integrin ligand binding site and interferes with the ability of MAdCAM to bind and contribute to immune cell accumulation into the inflamed gut tissue. An assay that measures binding of the product candidate to a_4b_7 in lymphocytes in circulating blood is termed a blood-based a_4b_7 RO assay. We are planning to assess the relationships of pharmacokinetics, pharmacodynamics and RO of our two a_4b_7 product candidates in a nonhuman primate study.

Clinical Development Overview

We expect that the early clinical development program will aim to demonstrate therapeutic engagement of a_4b_7 by our product candidate. We intend to monitor inhibition of a_4b_7 using an RO assay in blood as a marker of clinical activity.

We expect that a Phase 1a clinical program will be conducted in healthy volunteers, with single and multiple ascending dose trials designed to assess drug safety and pharmacokinetics. Additionally, our Phase 1a program will focus on finding doses of the product candidate that can achieve sustained RO.

We expect that our Phase 1b program will be conducted in patients with IBD to assess safety and pharmacokinetics, as well as RO as a pharmacodynamic marker of a_4b_7 inhibition. We expect that patients will be treated with multiple ascending doses of the product candidate for a two-week period until a dose is reached at which sustained RO levels consistent with those of vedolizumab are observed. Once this dose is achieved, we expect that patients will be continued on treatment for a minimum of eight additional weeks. Assessments of disease activity will be conducted at baseline and at the completion of the treatment regimen. They may include flexible sigmoidoscopy with biopsy to assess colonic mucosa, fecal calprotectin, serum biomarkers and standardized scores of disease activity.

Our a_vb_6-specific Integrin Inhibitor Program for Fibrosis

Fibrosis is an intrinsic response to chronic injury that can progress toward excessive tissue scarring and organ failure, such as liver cirrhosis and renal failure. The lack of antifibrotic treatments that can halt or ameliorate the progression of disease represents an unmet medical need for patients with diseases, such as IPF, primary sclerosing cholangitis, or PSC, and NASH. The primary clinical indications for the a_vb_6 program are IPF and late-stage liver fibrosis. AbbVie has an option to acquire worldwide development and

commercialization rights for our a_vb_6 programs in IPF and liver indications prior the commencement of clinical development.

Idiopathic Pulmonary Fibrosis

IPF is a life-threatening disease characterized by progressive fibrosis of the lungs leading to their deterioration and destruction. The cause of IPF is unknown. IPF primarily occurs in persons over 55 years old, with generally poor prognoses. Median survival time for IPF patients has been estimated to be two to five years from time of diagnosis. Most patients die from progressive loss of lung function. According to studies, conservative estimates of incidence ranges from three to nine cases per 100,000 per year for Europe and North America.

The current medical treatment strategy for IPF aims to slow disease progression and improve quality of life, as no medical therapies have been found to cure IPF. U.S and European regulatory agencies have approved pirfenidone (marketed as Esbriet) and nintedanib (marketed as Ofev) for the treatment of mild to moderate IPF. Both pirfenidone and nintedanib have been shown to slow the rate of functional decline in IPF and are viewed as the standard of care worldwide. While the regulatory approval of these drugs represents a significant advancement for IPF patients, neither drug improves lung function, and the disease continues to progress in most patients. Moreover, the adverse effects associated with these therapies includes diarrhea and liver function test abnormalities with nintedanib and nausea and rash with pirfenidone. The last line of treatment is lung transplantation, but many patients die while awaiting a transplant, as donors are limited.

Primary Sclerosing Cholangitis

PSC is a rare, serious, chronic cholestatic liver disease characterized by a progressive, autoimmune-based destruction of bile ducts with eventual onset of cirrhosis. PSC is often complicated by the development of malignancies, the most common being cholangiocarcinoma, as well as complications involving the biliary tree, including cholangitis, and ductal strictures and gallstones, which may require frequent endoscopic or surgical interventions. The true prevalence of ulcerative colitis in the patients with PSC is estimated to be 90 percent. PSC is usually a progressive disorder that ultimately leads to complications of cholestasis and hepatic failure. Median survival without liver transplantation after diagnosis is 10 to 12 years, depending upon stage of the disease at the time of diagnosis. According to studies, the estimated incidence of PSC is one case per 100,000 people in the U.S.

The current medical treatment strategy for PSC is limited. The FDA has not approved any therapies for the treatment of PSC. Liver transplant is currently the only treatment shown to improve clinical outcomes. However, the post-transplant recurrence rate of PSC has been shown to be as high as 20%. First-line treatment is typically off-label ursodeoxycholic acid, UDCA, although UDCA has not been shown to improve transplant-free survival and, at high doses, has been associated with increased risk for serious complications.

Nonalcoholic Steatohepatitis (NASH)

NASH is a common and progressive chronic liver disease that is an advanced progression of nonalcoholic fatty liver disease, or NAFLD. NASH has four main components: metabolic, steatosis, inflammation and fibrosis. NASH is increasingly understood to be a consequence of metabolic syndrome and is frequently associated with obesity, insulin resistance and type 2 diabetes. NASH is characterized by non-alcoholic-induced excessive fat accumulation, or steatosis, in the liver. In NASH patients, steatosis induces chronic inflammation and the death of liver cells, observed histologically as ballooning of necrotic cells. Inflammation and ballooning may lead to progressive fibrosis and ultimately cirrhosis in the liver, as the body responds to the liver's injured state. An estimated 20% of patients with NASH progress to cirrhosis within a decade of diagnosis and, compared to the general population, have a ten-fold greater risk of liver-related mortality. NASH is now widely believed to overtake hepatitis C as the leading cause of liver transplant. It is also considered the leading cause of primary liver cancer. The overall prevalence of NASH is reported to be three to five percent in the U.S. according to biopsy-based studies. However, given the prevalence of the underlying risk factors for the disease, including type 2 diabetes and obesity, as well as the need for a biopsy to diagnose NASH, the disease may be underdiagnosed.

The current medical treatment strategy for NASH is limited, as the disease is normally only diagnosed in advanced stages, as there are no FDA-approved therapies for the disease. Various therapeutics, including insulin sensitizers and vitamin E, are used off-label. Lifestyle changes, including modification of diet and exercise to reduce body weight, as well as treatment of concomitant diabetes and dyslipidemia, are commonly accepted as the standard of care, but patient adherence is often poor.

Overview of Pathway and Target Biology

Fibrosis is a major contributing factor in all of these diseases, with TGF-b being a recognized driver. Tissue release of active TGF-b is mediated by a_v integrins, including a_vb_6. We believe that targeting a_vb_6 will result in local inhibition of TGF-b to achieve anti-fibrotic effect in tissues, while limiting collateral unwanted effects associated with pan-TGF-b inhibition. An a_vb_6 inhibitor may prevent the release of activated TGF-b thereby abrogating a main driver of fibrosis in IPF. Pharmacological inhibition of a_vb_6 has been observed to be associated with anti-fibrotic activity in four lung fibrosis models, including a bleomycin-induced lung fibrosis model.

Our Integrin Approach to Fibrosis

We have developed oral small-molecule integrin therapeutics designed to have high potency and selectivity for a_vb_6, oral absorption and favorable pharmacokinetic properties. In the case of a_vb_6, we believe it is critical to stabilize a fully inactive state in order to achieve the desired activity, and all of our a_vb_6 programs thus seek to stabilize an inactive bent-closed state of the receptor. This approach is supported by studies that suggest that a significant population of the receptors exists in this inactive closed form in native tissue.

We investigated the impact of differences in conformational state in a preclinical, 3,5-diethoxycarbonyl-1,3-dihydrocollidine, or DDC, model of liver fibrosis. The opening compound is expected to shift the a_vb_6 integrin further towards the extended open conformation while the closing compound shifts the a_vb_6 integrin to the closed conformation (Figure 4, Panel A). In this model, we observed that a tool compound (closing compound) of the bent closed state of a_vb_6 not only statistically significantly inhibited TGF-b-mediated downstream genes related to fibrosis, such as the collagen gene Col1a1, as compared to the disease state but that it also statistically significantly normalized other fibrosis-related pathways such as connective tissue growth factor, or CTGF, and matrix metalloproteinase-3, or MMP3 as compared to the disease state. On the other hand, we observed that a tool compound (opening compound) of the extended open activated conformation of the integrin did not have these additional benefits on CTGF or MMP3 (Figure 4). CTGF has important roles in many biological processes, including fibrosis and several forms of cancers, while MMP3 is known to be involved in tissue remodeling and has been implicated in increased susceptibility to diseases where hyperpermeability in endothelium or epithelium would result in the exacerbation of diseases.

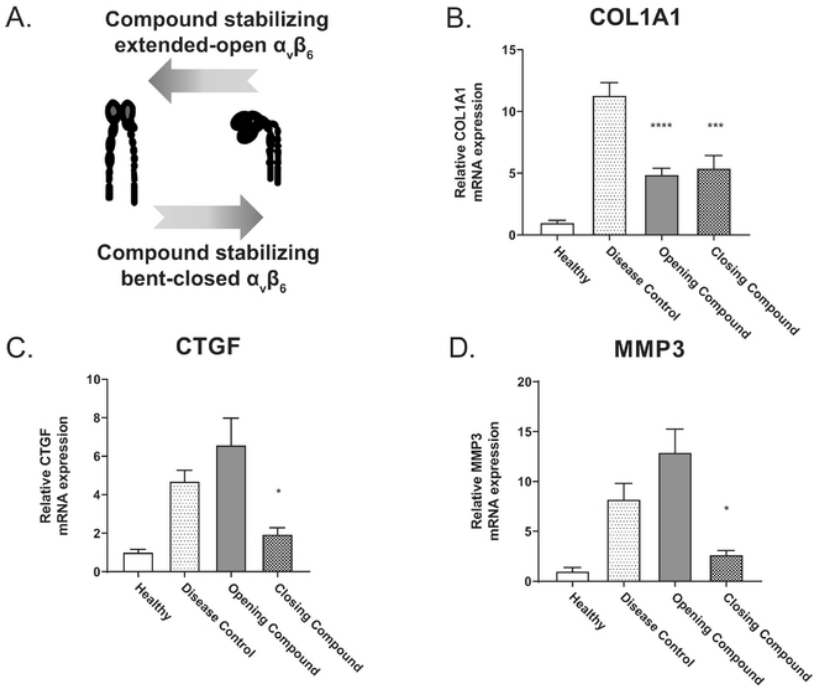


*Figure 4: Differential effects of $\alpha_v\beta_6$ inhibitors that stabilize the extended-open and bent-closed conformation in an acute liver fibrosis model on collagen 1, CTGF and MMP3. The opening inhibitor is expected to shift the $\alpha_v\beta_6$ integrin further towards the extended open conformation while the closing inhibitor shifts the $\alpha_v\beta_6$ integrin to the closed conformation (Panel A). While we observed that both compounds inhibited TGF-b downstream fibrosis genes such as collagen 1 (Panel B), only the bent closed inhibitor was observed to decrease the expression of CTGF (Panel C) and MMP3 (Panel D), both of which are involved in various diseases. Statistical analysis: *p<0.05, **p<0.01, and ***p<0.001, vs. Disease control by one-way ANOVA followed by paired comparison.*

We have also observed antifibrotic activity of our small-molecule inhibitors in a variety of rodent fibrosis models, as described in this section on our Morphic tool compounds. Specific data on our development candidate MORF-720 is discussed below in " — MORF-720 — Our most advanced integrin candidate product". Testing of MORF-720 is still ongoing and Figures 4 through 8 in this section do not incorporate data regarding MORF-720, but we believe that the data from our tool compounds are comparable to our MORF-720 product candidate. We examined the effects of one of our a_vb_6 tool compounds in an intratracheal-bleomycin-induced IPF mouse model, in which mice develop serious lung fibrosis. Therapeutic dosing of a Morphic a_vb_6 inhibitor was observed to improve lung fibrosis in intratracheal-dosed bleomycin-induced lung fibrosis model in mice in comparison to pirfenidone. As shown in the left panel of Figure 5 below, we observed that our compound was associated with statistically significantly improved lung fibrosis, as measured by Ashcroft scores, as compared to pirfenidone. We also examined the effects of one of our a_vb_6 compounds and an ALK5 inhibitor in lung fibrosis in a scleroderma model induced by mini-pump infusion of bleomycin for 28 days. The preliminary results are shown in the right panel of Figure 5. We observed that our compound was associated with a statistically significant reduction of collagen content in the lung to near normal lung collagen content as compared to the disease state, which was equivalent to or more favorable than the lung collagen content that we observed with an ALK5i, a TGF-bR1 inhibitor published by a third party.

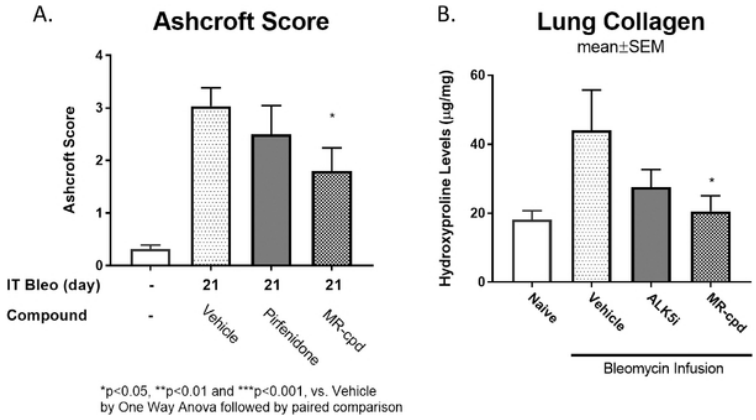


Figure 5: Effects of Morphic a_vb_6 inhibitors in lung fibrosis models. Panel A: Therapeutic dosing of a Morphic a_vb_6 inhibitor was observed to improve lung fibrosis in intratracheal-dosed bleomycin-induced lung fibrosis model in mice in comparison to pirfenidone. Formalin-fixed mouse lung lobes were sectioned and stained. Lung sections were scored according to the modified Ashcroft scale. Scores for five representative 200x microscopic fields per sample were averaged to obtain a mean score for each animal. Two-tailed tests were used, and significance was set at p£0.05 for all tests. Panel B: The effects of prophylactically dosed a_vb_6 compound and an ALK5i inhibitor in a fibrosis model induced by bleomycin through mini-pump infusion for 28 days. Mouse lung fibrosis was measured through collagen content (hydroxyproline concentration). Two-tailed tests were used, and significance was set at p: 0.05 for all tests. Animal numbers per group: n=10 for Naïve (Healthy Control), n=12 for Vehicle (Disease Control), n=8 for Pirfenidone treatment, n=9 for all other groups.

The therapeutic potential of our a_vb_6 inhibitors has also been evaluated in a diet-induced PSC-like biliary fibrosis model that cause mice to develop advanced biliary fibrosis. We observed that all of our a_vb_6 compounds evaluated in this model were associated with improvements in liver function and fibrosis. As shown in Figure 6 (left), we observed that our tool a_vb_6 inhibitor was associated with statistically significant nearly normal the total plasma bilirubin levels as compared to the disease state. As shown in Figure 6

(right), we also observed that our a_vb_6 inhibitor was associated with abrogated liver fibrosis as shown by Sirius Red staining. The activity of our small molecule was observed to be substantially better than a mouse version of BG00011, an anti-a_vb_6 antibody in development by a third party.

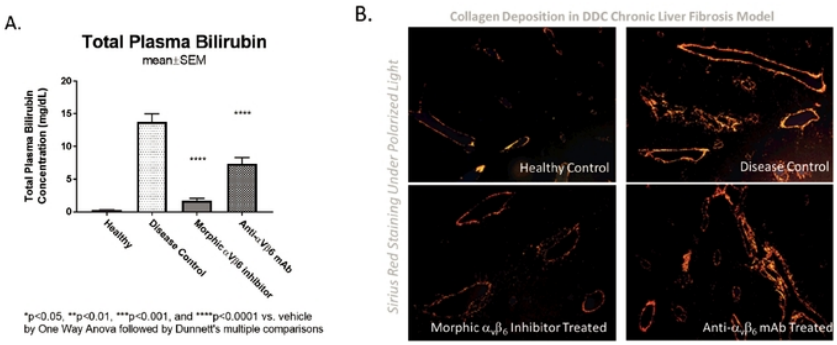


Figure 6: Our a_vb_6 inhibitor activity in a chronic DDC-induced PSC-like biliary fibrosis model in comparison to an anti-a_vb_6 antibody (Panel A). Collagen deposition in the mouse liver as detected by Sirius Red staining (Panel B). Animal numbers per group: n=10 for all groups.

The differential effects between our tool a_vb_6 small-molecule inhibitors and the anti-a_vb_6 antibody were also observed in a surgically created unilateral ureteral obstruction, or UUO, mouse model, in which the mice developed renal fibrosis. We observed that the blockade of the a_vb_6 integrin with our compound was associated with reduced kidney fibrosis, as shown in Figure 7, and that our a_vb_6 inhibitor exhibited greater activity than the anti-a_vb_6 antibody.

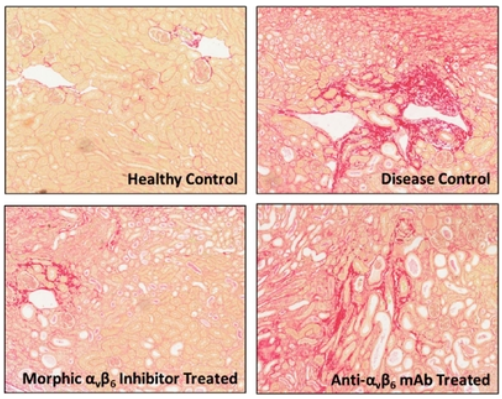


Figure 7: Our tool a_vb_6 small-molecule inhibitor and anti-a_vb_6 mAb 3G9 were both observed to reduce kidney fibrosis in UUO model after 14-day treatment. Collagen was stained by Sirius Red. Images were taken under bright-field microscopy.

A critical biochemical change associated with TGF-b pathway activation is an increase in the ratio of cellular phosphorylated SMAD, or pSMAD, to cell protein. The SMAD is a downstream protein of TGF-b signaling pathway, which is phosphorylated upon activation of TGF-b levels of TGF-b pathway inhibition that correspond to active doses in animals (Figure 8).

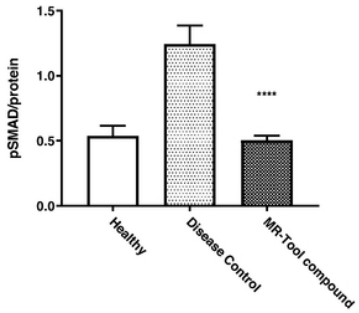


*Figure 8: We observed that our compound was associated inhibition of TGF-b signaling as illustrated by a decrease in the ratio of hepatic phosphorylated SMAD to total protein in chronic DDC mice. ****p<0.0001 indicates statistical significance compared to DDC vehicle group by one-way ANOVA followed by paired comparison.*

MORF-720 — Our most advanced integrin candidate product

Designed using our MInT Platform, MORF-720 is a highly potent inhibitor of a_vb_6, with a single digit nM affinity in a cell-free isolated protein-binding assay as well as single digit nM in a cell-based functional assay, and has high selectivity for a_vb_6 as compared to other integrins (selectivity is ³50x in the cell free isolated protein-binding assay). MORF-720 seeks to stabilize the inactive bent closed conformation of the a_vb_6 integrin and has exhibited antifibrotic activity in preclinical fibrosis models. MORF-720 also exhibited good cell permeability *in vitro*, resulting in oral exposure in multiple preclinical models.

MORF-720 has been observed to be very potent in a variety of *in vitro* and *ex vivo* assays. Because a_vb_6-mediated TGF-b activation is a key driver of fibrogenesis, we believe the TGF-b activation assay is the most biologically relevant measure of a compound's *in vivo* efficacy. In this assay, we observed that MORF-720 was highly potent with an IC_{50} of less than 10 nM. Another assay that we believe is highly relevant is precision-cut liver slice *ex vivo* system using fibrotic livers, in which the expression of fibrogenesis-related genes, such as COL1A1, are measured following treatment with a compound. Precision-cut liver slice represents an *ex vivo* tissue culture technique that replicates the multicellular characteristics of whole liver *in vivo* as they contain all physiologically relevant cells, as well as intact intercellular and cell-matrix interactions. The IC_{50} value of MORF-720 in this *ex vivo* system was observed to have an IC_{50} of less than 10 nM.

The anti-fibrotic activity of MORF-720 was evaluated in a chronic 3,5-diethoxycarboncyl-1, 4-dihydrocollidine, or DDC, diet-induced PSC-like liver fibrosis model as described earlier. We have observed that twice daily oral dosing of MORF-720 was associated with a statistically significant dose-dependent inhibition of fibrogenesis as measured by expression of the collagen gene COL1A1, reduction of collagen content as measured by hydroxyproline and improvement of liver function as measured by total plasma bilirubin levels, which was more favorable that the liver collagen content that we observed with an ALK5i, a TGF-bR1 inhibitor in development by a third party. Based on preclinical oral exposure data described above, we believe MORF-720 will, in humans, be suitable to support favorable dosing strategies.

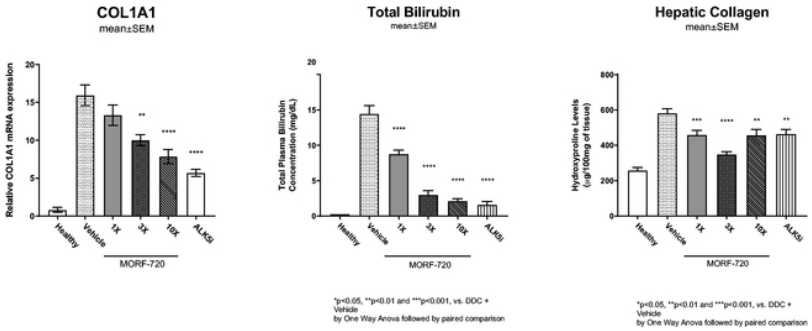


*Figure 9: We observed that MORF-720 was associated with dose-dependent reductions in liver fibrotic gene Col1A1 expression (Panel A), total plasma bilirubin (Panel B) and liver collagen content (Panel C) in chronic DDC mice. Statistical analysis: *p<0.05, **p<0.01, ***p<0.001, and ****p<0.0001 indicate statistical significance compared to DDC vehicle group by one-way ANOVA followed by paired comparison. Animal numbers: n=5 for Healthy Control, n=15 for Vehicle (Disease Control), and n=10 for all treatment groups.*

Clinical Development Overview

a_vb_6 inhibitor for treatment of Idiopathic Pulmonary Fibrosis (IPF)

As part of our collaboration with AbbVie, they have an option to license this program at IND for future development and commercialization, and if they exercise this option, they will control clinical development of MORF-720. If they do not exercise the option, our aim for the early clinical development program will be to demonstrate pharmacodynamic activity of MORF-720 and may include imaging of its binding to a_vb_6 and measurement of downstream markers of its inhibitory activity on TGF-b signaling.

The presence of a_vb_6 integrin in the lung may be assessed by positron emission tomography, or PET, scanning imaging using a specific probe that binds to the a_vb_6 integrin. Since MORF-720 is designed to inhibit binding of this probe competitively, we believe the change in the PET signal after MORF-720 administration in human trials will be indicative of its RO of a_vb_6.

We also plan to use the pSMAD/tSMAD ratio as a pharmacodynamic marker of MORF-720's activity on TGF-b signaling.

We expect the Phase 1a clinical program to include single and multiple dose ascending trials in healthy volunteers to assess MORF-720's safety and pharmacokinetics.

We expect the Phase 1b clinical program will be conducted in patients with IFP and will assess MORF-720's safety and pharmacokinetics, and may include PET RO imaging and pSMAD/tSMAD analysis. We expect that multiple ascending doses of MORF-720 will be administered to IPF patients for two-week intervals until a sustained inhibition of a_vb_6 is achieved. Patients may be continued on treatment with this dose of MORF-720 for additional 12-24 weeks.

Assessments of disease activity in Phase 1b clinical program may include, but are not limited to, quantitative high-resolution computed tomography with computer aided algorithm analysis and assessments of forced vital capacity and diffusion capacity.

a_vb_6 inhibitor for treatment of Primary Sclerosing Cholangitis (PSC)

We expect the early clinical development program will aim to demonstrate safety, pharmacokinetics and the therapeutic engagement of the a_vb_6 integrin by MORF-720. The Phase 1 clinical plan is to perform multiple

ascending dose trials in the patients with PSC. The approach of directly starting clinical trials in the target patient populations may be acceptable given that a_vb_6 inhibitors are expected to have already been tested in Phase 1 trials in healthy volunteers and IPF patients. Pharmacodynamic assessments may include, but are not limited to, serum biomarkers of cholestasis, serum biomarkers of fibrosis, magnetic resonance elastography, and magnetic resonance cholangiography.

a_vb_6 inhibitor for treatment of Non-Alcoholic Steatohepatitis (NASH)

The Phase 1 clinical plan is to perform multiple ascending dose trials in two cohorts of NASH patients, one with advanced fibrosis, but not cirrhosis, and a second with compensated NASH cirrhosis. Once the optimum dose is achieved, patients may be continued on treatment to extend disease assessments, that may include, but are not limited to serum biomarkers, magnetic resonance elastography, multi-parametric magnetic resonance imaging and ultrasound transient elastography.

Additional Preclinical and Discovery Efforts

Integrin modulator program for immuno-oncology

The involvement of the TGF-b pathways and extracellular matrix in cancer has been publicly reported by the scientific community. We seek to block the TGF-b pathway through antagonizing TGF-b-activating integrins in the tumor microenvironment which we believe would both inhibit tumor growth directly and inhibit down-regulation by TGF-b of immune responses and thereby also enable productive anti-tumor immune responses. This program aims to deliver an oral small-molecule integrin modulator as an immuno-oncology therapy. The target is expressed in solid tumor and tumor stroma cells, including both immune and non-immune cells. The integrin modulator is expected to have several mechanisms of action, which include the blockade of regulatory T cell formation through dendritic cells, the modulation of immune suppressive tumor environment through inhibition of local TGF-b activation and the increase of immune cell infiltration through tumor microenvironment remodeling. For this program, chemical matter has advanced thanks to synergistic structure activity relationship, or SAR, screening with other integrin modulator programs. The crystal structure of the target integrin has been elucidated for the first time in the field using our MInT Platform. Several of our compounds have been co-crystalized to fuel our understanding of the features driving compound selectivity and potency. Target validation and translational biology efforts are underway using small-molecule inhibitors.

New anti-fibrosis programs

We are pursuing additional integrin modulator programs for fibrosis-related indications such as NASH, cirrhosis, and pulmonary arterial fibrosis. Due to the role of integrins in TGF-b activation, mechano-transduction, cell migration and cell proliferation, integrins may trigger different pathways to initiate or exacerbate fibrosis under various pathologic conditions. Our strategy has enabled the identification of small molecules of multiple integrin targets that allow in-depth interrogations of these mechanisms. The a_vb_1 integrin is an emerging target for fibrosis based on literature and our internal data. The a_vb_1 heterodimer can be detected in hepatic stellate cells and fibroblasts, especially when they are activated. In human tissues, increase in a_vb_1 dimerization is observed in IPF, chronic kidney disease, or CKD, and NASH tissues. While our team continuous to investigate the mechanisms of action of a_vb_1 in fibrosis, we have generated crystal structures and advanced chemical matter for this target. These programs are at different discovery stages, with at least one of them expected to transition to lead optimization by the fourth quarter of 2019. AbbVie has an option to acquire worldwide development and commercialization rights for this program prior the commencement of clinical development.

Integrin modulators targeting additional receptors

Our research collaboration with Janssen has strategically expanded the targets that our MInT Platform addresses, including al integrins and modulators that are both antagonists and agonists. Several al integrins play critical roles in immune cell tissue retention, regulation of collagen stiffness or cell attachment in extracellular matrix. Aberrant expression and function of these integrins have been implicated in a variety of diseases.

License Agreements

AbbVie Agreement

In October 2018, we entered into a research and development collaboration with AbbVie designed to advance a number of our oral integrin therapeutics for fibrosis-related indications.

Under the terms of the agreement, AbbVie paid us an upfront payment of $100.0 million for research and development activities, and we provided AbbVie with exclusive license options on product candidates directed at a number of targets. For each compound, we will conduct research and development activities through the completion of IND-enabling studies, at which point AbbVie may pay a license fee of $20.0 million, on a compound-by-compound basis, to exercise its exclusive license option and assume responsibility for global development and commercialization. We are also eligible for clinical and commercial milestone payments and tiered royalties from high single digit to low teens on worldwide net sales for each licensed product. In addition, for certain compounds for which we have completed IND-enabling studies and which meet certain advancement criteria for a liver fibrosis indication, we have the option to commit to share development costs in exchange for an increased fixed royalty rate. We may exercise this option following completion of the first Phase 2b clinical trial for the relevant product.

With respect to certain additional integrin targets, we have also granted AbbVie a fully paid up, irrevocable and one-time (with limited exceptions) right of first negotiation to obtain an exclusive license to develop and commercialize licensed compounds directed to such targets, and corresponding licensed products, in consideration for additional payments to be negotiated by the parties.

We and AbbVie have each agreed to certain exclusivity obligations under the agreement. In particular, we have agreed not to develop, either alone or with any third party, any product directed to a target for which we have granted AbbVie an exclusive option until the expiration of the agreement or, if AbbVie does not exercise an option, the end of the option period for such target.

AbbVie may terminate the agreement in its entirety, on a country-by-country basis, or on a target-by-target basis (for each target for which AbbVie has exercised an option), at any time and without cause, upon 180 days' prior written notice to us. Additionally, AbbVie may terminate the agreement on a target-by-target basis (for each target for which AbbVie has exercised an option) immediately upon for any safety reason. Either party may terminate the agreement for an uncured material breach by the other party or in the case of the other party's insolvency.

Prior to this collaboration, AbbVie Ventures was an investor in our Series A and Series B financings.

Janssen Agreement

In February 2019, we entered into an agreement with Janssen, to discover and develop novel integrin therapeutics for patients with conditions not adequately addressed by current therapies. The Janssen collaboration focuses on three integrin targets, each target the subject of a research program, with the ability to substitute up to two integrin targets not explored by us.

Under the terms of the Janssen Agreement, on a research program-by-research program basis, the companies will collaborate through preclinical development to identify and advance candidates. Upon completing IND-enabling studies, on a research program-by-research program basis, Janssen may exercise an exclusive option to obtain an exclusive license with respect to the target that is the subject of the research program, including all licensed compounds that are the subject of the applicable research program, and then Janssen will be responsible for global clinical development and commercialization. In consideration of the rights granted, Janssen paid us an upfront fee of $10.0 million for each of the first two research programs, and will pay us an additional $5.0 million fee upon commencement of the third research program, and will fund research activities. In addition, on a research program-by-research program basis, we may be eligible to receive up to an additional $10.0 million in payments for late lead candidate optimization activities and Janssen's exercise of its exclusive option for such research program. We are

eligible to receive up to $729.0 million in the aggregate from the collaboration in upfront, option and milestone payments, as well as royalties on net sales. We will also receive, on a product-by-product and country-by-country basis, mid-single digit royalties (subject to royalty adjustments with aggregate floors) on worldwide net sales for any products resulting from the collaboration until the later of (i) the expiration of the last valid claim within the royalty bearing patents covering such product in such country and (ii) ten years after the first commercial sale of such product in such country.

In the event that Janssen does not exercise an option for a research program, and we have completed a POC clinical trial for a product that was the subject of such research program, then Janssen will have an exclusive right of first negotiation to negotiate the terms of a definitive agreement pursuant to which Janssen would be granted exclusive rights to develop and commercialize such product. In addition, if we have not completed a POC clinical trial for a product that was the subject of such research program and we make or receive a bona fide offer from a third party to license or transfer the rights to develop and commercialize such product, then under certain circumstances Janssen will have an exclusive first right to negotiate the terms of a definitive agreement pursuant to which Janssen would be granted exclusive rights to develop and commercialize such product.

Under the Janssen Agreement, we have agreed to certain exclusivity obligations, including not to exploit, either alone or with a third party, any molecules that are intended to bind to any of the targets that are the subject of a research program, and also not to conduct clinical trials for, manufacture or commercialize compounds synthesized by us during our research activities in patients with chronic kidney disease or acute kidney injury for three years after Janssen's exercise of a first option. The Janssen Agreement will expire, on a research program-by-research program basis, upon (i) the expiration of the option period for such research program, if Janssen does not exercise its option for such research program, or (ii) the expiration all royalty terms for all products that are the subject of the research program, if Janssen does exercise its option for such research program. In addition, Janssen may terminate the agreement in its entirety or on a research program-by-research program basis or country-by-country basis at any time and for any reason, upon 60 days' advance written notice to us. Either party may terminate the agreement on program-by-research program basis for an uncured material breach by the other party or in the case of the other party's insolvency.

Schrödinger Agreement

In June 2015, we entered into a collaboration agreement (as amended) with Schrödinger, or Schrödinger Agreement, to explore drug targets selected by us. Under the collaboration, Schrödinger will use its technology platform to perform virtual screens, and we and Schrödinger will collaborate to facilitate prioritization of targets, perform target validation and analysis, identify leads and perform lead optimization. Under the terms of the agreement, Schrödinger will exclusively work with us on integrin targets during the term of the agreement. In consideration for its performance of activities under the collaboration, Schrödinger received approximately 3.4 million shares of Series Seed preferred stock. In addition, with respect to compounds identified as part of the collaboration, Schrödinger may be eligible to receive certain payments from us related to development milestones, not to exceed in the aggregate, on a target-by-target basis, $950,000, as well as royalties in the low single digits on sales of products containing such compounds. Schrödinger may terminate the Schrödinger Agreement under certain circumstances, including if a certain number of developmental milestones have not been achieved by us within a certain timeframe.

Children's Medical Center Corporation Agreement

In October 2015, we entered into an exclusive license agreement (as amended) with CMCC, or CMCC Agreement, relating to technology on inhibiting integrins developed by Dr. Springer during the course of his employment at Boston Children's Hospital, an affiliate of CMCC. Under this agreement, we have an exclusive license under certain patent rights, and a non-exclusive license under certain know-how, owned by CMCC to develop and commercialize products worldwide for any therapeutic or diagnostic use in humans and veterinary applications. We also have the option to add new patent rights and know-how generated by the laboratory of Dr. Springer within a specified time period after the effective date of the CMCC Agreement

to that agreement for additional payments consistent with fair market value. In consideration of the license grants, upon execution of the CMCC Agreement we issued CMCC a number of shares of common stock representing 6% of the issued and outstanding units on a fully diluted basis. We also paid CMCC an upfront license issue fee of $50,000, and reimbursed CMCC for certain patent prosecution costs. We have also agreed to pay CMCC a license maintenance fee for the first three years after the effective date of the CMCC Agreement, certain development milestones, a percentage of sublicensing income we may receive, and running royalties in the low single digits on net sales of licensed products.

Under the CMCC Agreement, we have agreed to use commercially reasonably efforts to bring one or more licensed products to market, and to implement activities in a development plan within the timeframes set forth therein. In addition, if we fail to meet one or more specific developmental milestones, and do not take appropriate corrective action, then CMCC shall have the right to terminate the agreement.

Intellectual Property

Our success depends, in part, on our ability to protect (i) our intellectual property related to our product candidates and related methods, and (ii) our MInT Platform for generating integrin structures and modulators of those structures. Our success also depends on having the freedom to operate to enable commercialization of our product candidates, if approved, and preventing others from infringing our patent rights. We protect our MInT Platform using trade secrets, proprietary know-how, and, on rare occasion, patents. We protect our small molecule products using patents, and our policy is to seek product patent protection in key jurisdictions, including the United States, major European countries, and other jurisdictions we deem appropriate or as required by our collaboration agreements.

We file patent applications with respect to claims to compositions comprising our small-molecule inhibitors that modulate integrin activity, the compounds themselves, the use of such compounds to treat disease, as well as related manufacturing methods.

IP Rights

We have exclusively licensed one U.S. patent and one pending U.S. divisional patent application from CMCC with claims relating to modified integrin polypeptides and modified integrin polypeptide dimers. The licensed U.S. patent and any other U.S. patents issuing from the licensed pending U.S. divisional patent application or any other related licensed U.S. patent applications that may be filed in the future are expected to expire August 6, 2035, absent any adjustments or extensions. In addition, we rely extensively on trade secret protection for our MInT Platform, which extends beyond the initial integrin technology licensed from CMCC.

As of April 30, 2019, we solely owned various pending patent applications with respect to compositions-of-matter and methods of use for treating therapeutic indications related to the a_4b_7 and a_vb_6 integrins.

For our a_4b_7 compounds, we have one patent family comprising four pending applications (one international application and national applications in the United States and two other countries) which, if granted, are expected to expire in April 2039, absent any surrendered term, adjustments or extensions.

For our a_vb_6 compounds, we have four pending provisional patent applications (including at least one to MORF-720). If these provisional patent applications are timely filed as patent applications that are granted, such patents would expire in August 2039, absent any surrendered term, adjustments or extensions. In addition, we have two other patent families comprising five pending applications (two international applications and national applications in the United States and two other countries), which, if granted, are expected to expire in February 2038, absent any surrendered term, adjustments or extensions.

Intellectual Property Protection

We cannot predict whether the patent applications we pursue will issue as patents in any particular jurisdiction or whether the claims of any issued patents will provide any proprietary protection from competitors. Further, any issued patents may expire before the expected expiration dates disclosed above due to actions taken during patent prosecution, such as submission of a disclaimer surrendering the term of a patent beyond a certain date. Even if our pending patent applications are granted as issued patents, those patents, as well as any patents we license from third parties, may be challenged, circumvented or invalidated by third parties. While there are currently no contested proceedings or third-party claims relating to any of the patent applications described above, we cannot provide any assurances that we will not have such proceedings or third-party claims at a later date or once any patent is granted.

The term of a patent depends upon the legal term of patents in the particular country in which it is obtained. In most countries in which we file, the patent term is 20 years from the earliest date of filing a non-provisional patent application. In the United States, the term of a patent that covers an FDA-approved drug may be eligible for patent term extension, which permits in some cases restoration of patent term as compensation for patent term lost during the FDA regulatory review process. In certain circumstances, the Hatch-Waxman Act permits a patent term extension of up to five years beyond the unextended expiration date of the U.S. patent. The length of the patent term extension is related to the length of time the approved drug is under regulatory review. Patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, and only one patent applicable to an approved drug may be extended. Provisions are available in Europe and other foreign jurisdictions to extend the term of a patent that covers an approved drug, or provide an additional period of protection for the approved pharmaceutical product following expiry of the patent. In the future, if our products receive FDA approval, we expect to apply for patent term extensions on patents covering those products. We plan to seek patent term extensions to any of our issued patents in any jurisdiction where these are available; however, there is no guarantee that the applicable authorities, including the U.S. Patent and Trademark Office in the United States and the national patent offices in Europe, will agree with our assessment of whether such extensions should be granted, and, if granted, the length of such extensions.

In addition to our reliance on patent protection for our inventions, product candidates, and research programs, we also rely on trade secret protection for our confidential and proprietary information. For example, certain elements of our MInT Platform may be based on unpatented trade secrets that are not publicly disclosed. Although we take steps to protect our proprietary information and trade secrets, including through contractual means with our employees and consultants, third parties may independently develop substantially equivalent proprietary information and techniques, or otherwise gain access to our trade secrets or disclose our technology. Thus, we may not be able to meaningfully protect our trade secrets. It is our policy to require our employees, consultants, outside scientific collaborators, sponsored researchers, and other advisors to execute confidentiality agreements upon the commencement of employment or consulting relationships with us. These agreements provide that all confidential information concerning our business or financial affairs developed or made known to the individual or entity during the course of the party's relationship with us is to be kept confidential, and not disclosed to third parties except in specific circumstances. In the case of employees, the agreements provide that all inventions conceived by the individual, and which are related to our current or planned business or research and development or made during normal working hours, on our premises or using our equipment or proprietary information, are our exclusive property. In addition, we take other appropriate precautions, such as physical and technological security measures, to guard against misappropriation of our proprietary technology by third parties. We have also adopted policies and conduct training that provides guidance on our expectations and practices to protect our trade secrets.

Manufacturing

Currently, all of our clinical manufacturing facilities for clinical drug manufacturing, storage, distribution or quality testing is outsourced to third-party manufacturers. As our development programs progress and we build new process efficiencies, we expect to continually evaluate this strategy with the objective of satisfying demand for registration trials and, if approved, the manufacture, sale and distribution of commercial products. Under our collaboration agreements with AbbVie and Janssen, our partners will assume responsibility for the manufacturing according to the terms of those agreements for licensed products.

Competition

The biotechnology and pharmaceutical industries are characterized by rapid evolution of technologies, fierce competition and strong defense of intellectual property. While we believe that our MInT Platform and our knowledge, experience and scientific resources provide us with competitive advantages, we face competition from major pharmaceutical and biotechnology companies, academic institutions, governmental agencies and public and private research institutions, among others.

Any product candidates that we successfully develop and commercialize will compete with currently approved therapies and new therapies that may become available in the future. Key product features that would affect our ability to effectively compete with other therapeutics include the efficacy, safety and convenience of our products.

Despite significant biopharmaceutical industry investment, no oral integrin therapies have been approved. We are advancing our lead wholly-owned program for a_4b_7-specific integrin inhibitors affecting inflammation into clinical development initially for the treatment of IBD. There are currently approved IBD treatments marketed by UCB, Johnson & Johnson, Biogen Inc. and Pfizer Inc., in addition to other major pharmaceutical companies, against which our product candidate may compete, if approved. In addition, we are aware of IBD treatments in development by Roche Holding AG, AbbVie Inc., Gilead Sciences, RedHill Biopharma Ltd, Celgene Corporation, Eli Lilly and Company and Boehringer Ingelheim GmbH. Further, Takeda Pharmaceutical Company Ltd. currently markets Entyvio, which is an a_4b_7 monoclonal antibody to treat ulcerative colitis and Crohn's disease. Protagonist Therapeutics, Inc. also has a Phase 1 clinical gut-restricted a_4b_7 program under development.

We are also developing our most advanced product candidate, MORF-720, a selective oral a_vb_6-specific integrin inhibitor into clinical development for the treatment of IPF, in collaboration with AbbVie. There are currently approved IPF treatments marketed by Roche Holding AG and Boehringer Ingelheim GmbH against which our product candidate may compete, if approved. In addition, we are aware of IPF treatments in development by Galapagos NV. Further, we are aware of programs targeting a_vb_6 that are currently being investigated in preclinical studies or clinical trials by companies including Biogen Inc., Pliant Therapeutics, Inc. and Indalo Therapeutics, Inc.

Many of our competitors have significantly greater financial resources and expertise than we do in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Additionally, our competitors may also include companies that are or will be developing therapies for the same therapeutic areas that we are targeting, including autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer.

Government Regulation

Government authorities in the United States, at the federal, state and local level, and in other countries and jurisdictions extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, post-approval monitoring and reporting, and import and export of pharmaceutical products. The processes for obtaining regulatory approvals in the United States and in foreign countries and jurisdictions, along with subsequent compliance with applicable statutes and regulations and other regulatory authorities, require the expenditure of substantial time and financial resources.

FDA Approval Process

In the United States, pharmaceutical products are subject to extensive regulation by FDA. The Federal Food, Drug, and Cosmetic Act, or FD&C Act, and other federal and state statutes and regulations govern, among other things, the research, development, testing, manufacture, storage, recordkeeping, approval, labeling, promotion and marketing, distribution, post-approval monitoring and reporting, sampling and import and export of pharmaceutical products. Failure to comply with applicable U.S. requirements may subject a company to a variety of administrative or judicial sanctions, such as FDA refusal to approve pending NDAs, warning or untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, civil penalties and criminal prosecution.

Pharmaceutical product development for a new product or certain changes to an approved product in the U.S. typically involves preclinical laboratory and animal tests, the submission to FDA of an investigational new drug application, or IND, which must become effective before clinical testing may commence, and adequate and well-controlled clinical trials to establish the safety and effectiveness of the drug for each indication for which FDA approval is sought. Satisfaction of FDA pre-market approval requirements typically takes many years and the actual time required may vary substantially based upon the type, complexity and novelty of the product or disease.

Preclinical tests include laboratory evaluation of product chemistry, formulation and toxicity, as well as animal trials to assess the characteristics and potential safety and efficacy of the product. The conduct of the preclinical tests must comply with federal regulations and requirements, including good laboratory practices. The results of preclinical testing are submitted to FDA as part of an IND along with other information, including information about product chemistry, manufacturing and controls, and a proposed clinical trial protocol. Long-term preclinical tests, such as animal tests of reproductive toxicity and carcinogenicity, may continue after the IND is submitted. A 30-day waiting period after the submission of each IND is required prior to the commencement of clinical testing in humans. If FDA has neither commented on nor questioned the IND within this 30-day period, the clinical trial proposed in the IND may begin. Clinical trials involve the administration of the investigational new drug to healthy volunteers or patients under the supervision of a qualified investigator. Clinical trials must be conducted: (i) in compliance with federal regulations; (ii) in compliance with good clinical practice, or GCP, an international standard meant to protect the rights and health of patients and to define the roles of clinical trial sponsors, administrators and monitors; as well as (iii) under protocols detailing the objectives of the trial, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. Each protocol involving testing on U.S. patients and subsequent protocol amendments must be submitted to FDA as part of the IND.

FDA may order the temporary, or permanent, discontinuation of a clinical trial at any time, or impose other sanctions, if it believes that the clinical trial either is not being conducted in accordance with FDA requirements or presents an unacceptable risk to the clinical trial patients. The study protocol and informed consent information for patients in clinical trials must also be submitted to an institutional review board, or IRB, and ethics committee for approval. An IRB may also require the clinical trial at the site to be halted,

either temporarily or permanently, for failure to comply with the IRB's requirements, or may impose other conditions.

Clinical trials to support NDAs for marketing approval are typically conducted in three sequential phases, but the phases may overlap. In Phase 1, the initial introduction of the drug into healthy human subjects or patients, the drug is tested to assess metabolism, pharmacokinetics, pharmacological actions, side effects associated with increasing doses, and, if possible, early evidence of effectiveness. Phase 2 usually involves trials in a limited patient population to determine the effectiveness of the drug for a particular indication, dosage tolerance and optimum dosage, and to identify common adverse effects and safety risks. If a drug demonstrates evidence of effectiveness and an acceptable safety profile in Phase 2 evaluations, Phase 3 trials are undertaken to obtain the additional information about clinical efficacy and safety in a larger number of patients, typically at geographically dispersed clinical trial sites, to permit FDA to evaluate the overall benefit-risk relationship of the drug and to provide adequate information for the labeling of the drug. In most cases FDA requires two adequate and well-controlled Phase 3 clinical trials to demonstrate the efficacy of the drug. A single Phase 3 trial with other confirmatory evidence may be sufficient in rare instances, such as where the study is a large multicenter trial demonstrating internal consistency and a statistically very persuasive finding of a clinically meaningful effect on mortality, irreversible morbidity or prevention of a disease with a potentially serious outcome and confirmation of the result in a second trial would be practically or ethically impossible.

The manufacturer of an investigational drug in a Phase 2 or 3 clinical trial for a serious or life-threatening disease is required to make available, such as by posting on its website, its policy on evaluating and responding to requests for expanded access.

After completion of the required clinical testing, an NDA is prepared and submitted to FDA. FDA approval of the NDA is required before marketing of the product may begin in the U.S. The NDA must include the results of all preclinical, clinical and other testing and a compilation of data relating to the product's pharmacology, chemistry, manufacture and controls. The cost of preparing and submitting an NDA is substantial. The submission of most NDAs is additionally subject to a substantial application user fee, currently exceeding $2,580,000 for Fiscal Year 2019, and the manufacturer and/or sponsor under an approved drugs license application are also subject to annual program fees, currently exceeding $300,000 for each prescription product. These fees are typically increased annually. Sponsors of applications for drugs granted Orphan Drug Designation are exempt from these user fees.

FDA has 60 days from its receipt of an NDA to determine whether the application will be accepted for filing based on the agency's threshold determination that it is sufficiently complete to permit substantive review. Once the submission is accepted for filing, FDA begins an in-depth review. FDA has agreed to certain performance goals in the review of new drug applications to encourage timeliness. Most applications for standard review drug products are reviewed within ten to twelve months; most applications for priority review drugs are reviewed in six to eight months. Priority review can be applied to drugs that FDA determines offer major advances in treatment or provide a treatment where no adequate therapy exists. The review process for both standard and priority review may be extended by FDA for three additional months to consider certain late-submitted information, or information intended to clarify information already provided in the submission.

FDA may also refer applications for novel drug products, or drug products that present difficult questions of safety or efficacy, to an outside advisory committee — typically a panel that includes clinicians and other experts — for review, evaluation and a recommendation as to whether the application should be approved. FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendations.

Before approving an NDA, FDA will typically inspect one or more clinical sites to assure compliance with GCP. Additionally, FDA will inspect the facility or the facilities at which the drug is manufactured. FDA will not approve the product unless compliance with current good manufacturing practices, or cGMPs, is satisfactory and the NDA contains data that provide substantial evidence that the drug is safe and effective in the indication studied.

After FDA evaluates the NDA and the manufacturing facilities, it issues either an approval letter or a complete response letter. A complete response letter generally outlines the deficiencies in the submission and may require substantial additional testing, or information, in order for FDA to reconsider the application. If, or when, those deficiencies have been addressed to FDA's satisfaction in a resubmission of the NDA, FDA will issue an approval letter. FDA has committed to reviewing such resubmissions in two or six months depending on the type of information included. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. As a condition of NDA approval, FDA may require a risk evaluation and mitigation strategy, or REMS, to help ensure that the benefits of the drug outweigh the potential risks. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use, or ETASU. ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring and the use of patient registries. The requirement for a REMS can materially affect the potential market and profitability of the drug. Moreover, product approval may require substantial post-approval testing and surveillance to monitor the drug's safety or efficacy. Once granted, product approvals may be withdrawn if compliance with regulatory standards is not maintained or problems are identified following initial marketing.

Changes to some of the conditions established in an approved application, including changes in indications, labeling, or manufacturing processes or facilities, require submission and FDA approval of a new NDA or NDA supplement before the change can be implemented. An NDA supplement for a new indication typically requires clinical data similar to that in the original application, and FDA uses the same procedures and actions in reviewing NDA supplements as it does in reviewing NDAs.

Fast Track Designation and Accelerated Approval

FDA is required to facilitate the development, and expedite the review, of drugs that are intended for the treatment of a serious or life-threatening disease or condition for which there is no effective treatment and which demonstrate the potential to address unmet medical needs for the condition. Under the Fast Track program, the sponsor of a new drug candidate may request that FDA designate the drug candidate for a specific indication as a Fast Track drug concurrent with, or after, the filing of the IND for the drug candidate. FDA must determine if the drug candidate qualifies for Fast Track Designation within 60 days of receipt of the sponsor's request. Under the Fast Track program and FDA's accelerated approval regulations, FDA may approve a drug for a serious or life-threatening illness that provides meaningful therapeutic benefit to patients over existing treatments based upon a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments.

In clinical trials, a surrogate endpoint is a measurement of laboratory or clinical signs of a disease or condition that substitutes for a direct measurement of how a patient feels, functions or survives. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. A drug candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of Phase 4 or post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or confirm a clinical benefit during post-marketing studies, will allow FDA to withdraw the drug from the market on an expedited basis. All promotional materials for drug candidates approved under accelerated regulations are subject to priority review by FDA.

If a submission is granted Fast Track Designation, the sponsor may engage in more frequent interactions with FDA, and FDA may review sections of the NDA before the application is complete. This rolling review is available if the applicant provides, and FDA approves, a schedule for the submission of the remaining information and the applicant pays applicable user fees. However, FDA's time period goal for reviewing an application does not begin until the last section of the NDA is submitted. Additionally, Fast Track Designation may be withdrawn by FDA if FDA believes that the designation is no longer supported by data emerging in the clinical trial process.

Breakthrough Therapy Designation

FDA is also required to expedite the development and review of the application for approval of drugs that are intended to treat a serious or life-threatening disease or condition where preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints. Under the Breakthrough Therapy program, the sponsor of a new drug candidate may request that FDA designate the drug candidate for a specific indication as a breakthrough therapy concurrent with, or after, the filing of the IND for the drug candidate. FDA must determine if the drug candidate qualifies for Breakthrough Therapy designation within 60 days of receipt of the sponsor's request.

Orphan Drugs

Under the Orphan Drug Act, FDA may grant Orphan Drug Designation to drugs intended to treat a rare disease or condition — generally a disease or condition that affects fewer than 200,000 individuals in the U.S. Orphan Drug designation must be requested before submitting an NDA. After FDA grants Orphan Drug Designation, the generic identity of the drug and its potential orphan use are disclosed publicly by FDA. Orphan Drug Designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process. The first NDA applicant to receive FDA approval for a particular active ingredient to treat a particular disease with FDA Orphan Drug Designation is entitled to a seven-year exclusive marketing period in the U.S. for that product, for that indication. During the seven-year exclusivity period, FDA may not approve any other applications to market the same drug for the same disease, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity. Orphan drug exclusivity does not prevent FDA from approving a different drug for the same disease or condition, or the same drug for a different disease or condition. Among the other benefits of Orphan Drug Designation are tax credits for certain research and an exemption from the NDA application user fee.

Disclosure of Clinical Trial Information

Sponsors of clinical trials of FDA regulated products, including drugs, are required to register and disclose certain clinical trial information. Information related to the product, patient population, phase of investigation, study sites and investigators, and other aspects of the clinical trial is then made public as part of the registration. Sponsors are also obligated to discuss the results of their clinical trials after completion. Disclosure of the results of these trials can be delayed in certain circumstances for up to two years after the date of completion of the trial. Competitors may use this publicly available information to gain knowledge regarding the progress of development programs.

Pediatric Information

Under the Pediatric Research Equity Act, or PREA, NDAs or supplements to NDAs must contain data to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the drug is safe and effective. FDA may grant full or partial waivers, or deferrals, for submission of data. With certain exceptions, PREA does not apply to any drug for an indication for which orphan designation has been granted.

The Best Pharmaceuticals for Children Act, or BPCA, provides NDA holders a six-month extension of any exclusivity — patent or nonpatent — for a drug if certain conditions are met. Conditions for exclusivity

include FDA's determination that information relating to the use of a new drug in the pediatric population may produce health benefits in that population, FDA making a written request for pediatric studies, and the applicant agreeing to perform, and reporting on, the requested studies within the statutory timeframe. Applications under the BPCA are treated as priority applications, with all of the benefits that designation confers.

Post-Approval Requirements

Once an NDA is approved, a product will be subject to certain post-approval requirements. For instance, FDA closely regulates the post-approval marketing and promotion of drugs, including standards and regulations for direct-to-consumer advertising, off-label promotion, industry-sponsored scientific and educational activities and promotional activities involving the internet. Drugs may be marketed only for the approved indications and in accordance with the provisions of the approved labeling.

Adverse event reporting and submission of periodic reports are required following FDA approval of an NDA. FDA also may require post-marketing testing, known as Phase 4 testing, risk evaluation and mitigation strategies, or REMS, and surveillance to monitor the effects of an approved product, or FDA may place conditions on an approval that could restrict the distribution or use of the product. In addition, quality control, drug manufacture, packaging and labeling procedures must continue to conform to cGMPs after approval. Drug manufacturers and certain of their subcontractors are required to register their establishments with FDA and certain state agencies. Registration with FDA subjects entities to periodic unannounced inspections by FDA, during which the Agency inspects manufacturing facilities to assess compliance with cGMPs. Accordingly, manufacturers must continue to expend time, money and effort in the areas of production and quality-control to maintain compliance with cGMPs. Regulatory authorities may withdraw product approvals or request product recalls if a company fails to comply with regulatory standards, if it encounters problems following initial marketing, or if previously unrecognized problems are subsequently discovered.

The Hatch-Waxman Act

Orange Book Listing

In seeking approval for a drug through an NDA, applicants are required to list with the FDA each patent whose claims cover the applicant's product. Upon approval of a drug, each of the patents listed in the application for the drug is then published in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, commonly known as the Orange Book. Drugs listed in the Orange Book can, in turn, be cited by potential generic competitors in support of approval of an abbreviated new drug application, or ANDA. An ANDA provides for marketing of a drug product that has the same active ingredients in the same strengths and dosage form as the listed drug and has been shown through bioequivalence testing to be therapeutically equivalent to the listed drug. Other than the requirement for bioequivalence testing, ANDA applicants are not required to conduct, or submit results of, pre-clinical or clinical tests to prove the safety or effectiveness of their drug product. Drugs approved in this way are commonly referred to as "generic equivalents" to the listed drug and can often be substituted by pharmacists under prescriptions written for the original listed drug.

The ANDA applicant is required to certify to the FDA concerning any patents listed for the approved product in the FDA's Orange Book. Specifically, the applicant must certify that (i) the required patent information has not been filed; (ii) the listed patent has expired; (iii) the listed patent has not expired but will expire on a particular date and approval is sought after patent expiration; or (iv) the listed patent is invalid or will not be infringed by the new product. The ANDA applicant may also elect to submit a section viii statement certifying that its proposed ANDA label does not contain (or carve out) any language regarding the patented method-of-use rather than certify to a listed method-of-use patent. If the applicant does not challenge the listed patents, the ANDA application will not be approved until all the listed patents claiming the referenced product have expired. A certification that the new product will not infringe the already approved product's listed patents, or that such patents are invalid, is called a Paragraph IV certification. If the ANDA

applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the ANDA has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days of the receipt of a Paragraph IV certification automatically prevents the FDA from approving the ANDA until the earlier of 30 months, expiration of the patent, settlement of the lawsuit, or a decision in the infringement case that is favorable to the ANDA applicant.

The ANDA application also will not be approved until any applicable non-patent exclusivity listed in the Orange Book for the referenced product has expired.

Exclusivity

Upon NDA approval of a new chemical entity, or NCE, which is a drug that contains no active moiety that has been approved by FDA in any other NDA, that drug receives five years of marketing exclusivity during which FDA cannot receive any ANDA seeking approval of a generic version of that drug. Certain changes to a drug, such as the addition of a new indication to the package insert, are associated with a three-year period of exclusivity during which FDA cannot approve an ANDA for a generic drug that includes the change. An ANDA may be submitted one year before NCE exclusivity expires if a Paragraph IV certification is filed. If there is no listed patent in the Orange Book, there may not be a Paragraph IV certification, and, thus, no ANDA may be filed before the expiration of the exclusivity period.

Patent Term Extension

After NDA approval, owners of relevant drug patents may apply for up to a five-year patent extension. The allowable patent term extension is calculated as half of the drug's testing phase (the time between IND application and NDA submission) and all of the review phase (the time between NDA submission and approval up to a maximum of five years). The time can be shortened if FDA determines that the applicant did not pursue approval with due diligence. The total patent term after the extension may not exceed 14 years, and only one patent can be extended. For patents that might expire during the application phase, the patent owner may request an interim patent extension. An interim patent extension increases the patent term by one year and may be renewed up to four times. For each interim patent extension granted, the post-approval patent extension is reduced by one year. The director of the United States Patent and Trademark Office must determine that approval of the drug covered by the patent for which a patent extension is being sought is likely. Interim patent extensions are not available for a drug for which an NDA has not been submitted.

Other Healthcare Laws

In addition to FDA restrictions on marketing of pharmaceutical products, several other types of state and federal laws have been applied to restrict certain general business and marketing practices in the pharmaceutical industry in recent years. These laws include anti-kickback statutes, false claims statutes and other healthcare laws and regulations.

The federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce, or in return for, purchasing, leasing, ordering or arranging for the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid, or other federally financed healthcare programs. The Patient Protection and Affordable Care Act as amended by the Health Care and Education Reconciliation Act, collectively, the ACA, amended the intent element of the federal statute so that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to commit a violation. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers, among others, on the other. Although there are a number of statutory exceptions and regulatory safe harbors protecting certain common activities from prosecution or other regulatory sanctions, the exceptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to

induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor.

Federal civil and criminal false claims laws, including the federal civil False Claims Act, prohibit any person or entity from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, or knowingly making, or causing to be made, a false statement to have a false claim paid. This includes claims made to programs where the federal government reimburses, such as Medicare and Medicaid, as well as programs where the federal government is a direct purchaser, such as when it purchases off the Federal Supply Schedule. Recently, several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly inflating drug prices they report to pricing services, which in turn were used by the government to set Medicare and Medicaid reimbursement rates, and for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. In addition, certain marketing practices, including off-label promotion, may also violate false claims laws. Additionally, the ACA amended the federal Anti-Kickback Statute such that a violation of that statute can serve as a basis for liability under the federal civil False Claims Act. Most states also have statutes or regulations similar to the federal Anti-Kickback Statute and civil False Claims Act, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

Other federal statutes pertaining to healthcare fraud and abuse include the civil monetary penalties statute, which prohibits, among other things, the offer or payment of remuneration to a Medicaid or Medicare beneficiary that the offerer or payor knows or should know is likely to influence the beneficiary to order a receive a reimbursable item or service from a particular supplier, and the additional federal criminal statutes created by the Health Insurance Portability and Accountability Act of 1996, or HIPAA, which prohibits, among other things, knowingly and willfully executing or attempting to execute a scheme to defraud any healthcare benefit program or obtain by means of false or fraudulent pretenses, representations or promises any money or property owned by or under the control of any healthcare benefit program in connection with the delivery of or payment for healthcare benefits, items or services.

In addition, HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, including the Final Omnibus Rule published on January 25, 2013, impose obligations on certain healthcare providers, health plans, and healthcare clearinghouses, known as covered entities, as well as their business associates that perform certain services involving the storage, use or disclosure of individually identifiable health information, including mandatory contractual terms, with respect to safeguarding the privacy, security, and transmission of individually identifiable health information, and require notification to affected individuals and regulatory authorities of certain breaches of security of individually identifiable health information. HITECH increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney's fees and costs associated with pursuing federal civil actions. In addition, many state laws govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, and often are not pre-empted by HIPAA.

Further, pursuant to the ACA, the Centers for Medicare & Medicaid Services, or CMS, has issued a final rule that requires manufacturers of prescription drugs to collect and report information on certain payments or transfers of value to physicians and teaching hospitals, as well as investment interests held by physicians and their immediate family members. The first reports were due in 2014 and must be submitted on an annual basis. The reported data is made available in searchable form on a public website on an annual basis. Failure to submit required information may result in civil monetary penalties. Effective January 1, 2022, reporting on transfers of value to physician assistants, nurse practitioners or clinical nurse specialists, certified registered nurse anesthetists, and certified nurse-midwives will also be required.

In addition, several states now require prescription drug companies to report certain expenses relating to the marketing and promotion of drug products and to report gifts and payments to individual healthcare practitioners in these states. Other states prohibit various marketing-related activities, such as the provision of certain kinds of gifts or meals. Still other states require the posting of information relating to clinical studies and their outcomes. Some states require the reporting of certain drug pricing information, including information pertaining to and justifying price increases, or prohibit prescription drug price gouging. In addition, states such as California, Connecticut, Nevada, and Massachusetts require pharmaceutical companies to implement compliance programs and/or marketing codes. Several additional states are considering similar proposals. Certain states and local jurisdictions also require the registration of pharmaceutical sales and medical representatives. Compliance with these laws is difficult and time consuming, and companies that do not comply with these state laws face civil penalties.

Efforts to ensure that business arrangements with third parties comply with applicable healthcare laws and regulations involve substantial costs. If a drug company's operations are found to be in violation of any such requirements, it may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, the curtailment or restructuring of its operations, loss of eligibility to obtain approvals from the FDA, exclusion from participation in government contracting, healthcare reimbursement or other federal or state government healthcare programs, including Medicare and Medicaid, integrity oversight and reporting obligations, imprisonment, and reputational harm. Although effective compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, these risks cannot be entirely eliminated. Any action for an alleged or suspected violation can cause a drug company to incur significant legal expenses and divert management's attention from the operation of the business, even if such action is successfully defended.

U.S. Healthcare Reform

In the United States there have been, and continue to be, proposals by the federal government, state governments, regulators and third-party payors to control or manage the increased costs of health care and, more generally, to reform the U.S. healthcare system. The pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives For example, in March 2010, the ACA was enacted, which intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms, substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The ACA, among other things, (i) subjected therapeutic biologics to potential competition by lower-cost biosimilars by creating a licensure framework for follow-on biologic products, (ii) proscribed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs and therapeutic biologics that are inhaled, infused, instilled, implanted or injected, (iii) increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations, (iv) established annual nondeductible fees and taxes on manufacturers of certain branded prescription drugs and therapeutic biologics, apportioned among these entities according to their market share in certain government healthcare programs (v) established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% (now 70%) point of-sale discounts off negotiated prices of applicable brand drugs and therapeutic biologics to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs and therapeutic biologics to be covered under Medicare Part D, (vi) expanded eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability, (vii) expanded the entities eligible for discounts under the Public Health program (viii) created a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such

research, and (ix) established a Center for Medicare Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

The current U.S. presidential administration and Congress have, and we expect they will continue to, seek to modify, repeal, or otherwise invalidate all, or certain provisions of, the ACA. Since January 2017, the current U.S. presidential administration has issued two executive orders and other directives designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. For example, on October 12, 2017, the current U.S. presidential administration issued an executive order that expands the use of association health plans and allows anyone to purchase short-term health plans that provide temporary, limited insurance. This executive order also calls for the halt of federal payments to health insurers for cost-sharing reductions previously available to lower-income Americans to afford coverage. There is still uncertainty with respect to the impact this executive order could have on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017, or the Tax Reform Act, among other things, included a provision that repealed, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". Additionally, on January 22, 2018, the current U.S. presidential administration signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018, or the BBA, among other things, amended the ACA, effective January 1, 2019, to increase from 50% to 70% the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole". More recently, in July 2018, CMS published a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. On December 14, 2018, a Texas U.S. District Court Judge ruled that the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress as part of the Tax Reform Act. While the Texas U.S. District Court Judge, as well as the current U.S. presidential administration and CMS, have stated that the ruling will have no immediate effect pending appeal of the decision, it is unclear how this decision, subsequent appeals, and other efforts to repeal and replace the ACA will impact the ACA. There is still uncertainty with respect to the impact the current U.S. presidential administration and the Congress may have, if any, and any changes will likely take time to unfold, and could have an impact on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA. However, we cannot predict the ultimate content, timing or effect of any healthcare reform legislation or the impact of potential legislation on us.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted to reduce healthcare expenditures. United States federal government agencies also currently face potentially significant spending reductions, which may further impact healthcare expenditures. On August 2, 2011, the Budget Control Act of 2011 among other things, created measures for spending reductions by Congress. A joint select committee on deficit reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, including the BBA,

will remain in effect through 2027 unless additional Congressional action is taken. Moreover, on January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. If federal spending is further reduced, anticipated budgetary shortfalls may also impact the ability of relevant agencies, such as the FDA or the National Institutes of Health to continue to function at current levels. Amounts allocated to federal grants and contracts may be reduced or eliminated. These reductions may also impact the ability of relevant agencies to timely review and approve research and development, manufacturing, and marketing activities, which may delay our ability to develop, market and sell any products we may develop.

Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives. For example, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or MMA, changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for physician-administered drugs. In addition, this legislation provided authority for limiting the number of drugs that will be covered in any therapeutic class. While the MMA only applies to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in reimbursement that results from the MMA may result in a similar reduction in payments from private payors.

Recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. At the federal level, the current U.S. presidential administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Additionally, on May 11, 2018, the current U.S. presidential administration laid out the administration's "Blueprint" to reduce the cost of prescription medications while preserving innovation and cures. While the Department of Health and Human Services, or HHS, is soliciting feedback on some of these measures, other actions may be immediately implemented by HHS under existing authority. Further, on January 31, 2019, the HHS Office of Inspector General, proposed modifications to the federal Anti-Kickback Statute discount safe harbor for the purpose of reducing the cost of drug products to consumers which, among other things, if finalized, will affect discounts paid by manufacturers to Medicare Part D plans, Medicaid managed care organizations and pharmacy benefit managers working with these organizations. Although a number of these, and other potential, proposals will require additional authorization to become effective, Congress and the current U.S. presidential administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

Additionally, on May 30, 2018, the Trickett Wendler, Frank Mongiello, Jordan McLinn, and Matthew Bellina Right to Try Act of 2017 was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase I clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA authorization under an FDA

expanded access program; however, manufacturers are not obligated to provide investigational new drug products under the current federal right to try law.

Employees

As of March 31, 2019, we had 59 full-time employees. Of these employees, 28 have an M.D. or a Ph.D. From time to time, we also retain independent contractors to support our organization. None of our employees are represented by a labor union or covered by collective bargaining agreements, and we believe our relationship with our employees is good.

Properties and Facilities

Our principal executive office is located in Waltham, Massachusetts, where we lease a total of approximately 29,785 square feet of office and laboratory space in three buildings that we use for our administrative, research and development and other activities. The lease under our Waltham buildings expires in May 2022, unless we exercise our option to extend the lease term through May 2025.

Legal Proceedings

From time to time, we may be involved in legal proceedings arising in the ordinary course of our business. We are not presently a party to any legal proceedings that, in the opinion of management, would have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on us due to defense and settlement costs, diversion of management resources, negative publicity and reputational harm, and other factors.

MANAGEMENT

Executive Officers and Directors

The following table provides information regarding our executive officers and directors as of April 30, 2019:

Name	Age	Position
Executive Officers:		
Praveen P. Tipirneni, M.D.	50	President, Chief Executive Officer and Director
Robert E. Farrell, Jr., CPA	53	Vice President of Finance and Operations, Treasurer
William D. DeVaul, Esq.	48	General Counsel and Secretary
Bruce N. Rogers, Ph.D.	50	Chief Scientific Officer
Alexey A. Lugovskoy, Ph.D.	46	Chief Development Officer
Non-Employee Directors:		
Gustav Christensen	71	Chairman of the Board, Director
Barbara J. Dalton, Ph.D.	65	Director
Ramy Farid, Ph.D.	54	Director
Vikas Goyal	39	Director
Nilesh Kumar, Ph.D.	43	Director
Amir Nashat	46	Director
Timothy A. Springer, Ph.D.	71	Director
Otello Stampacchia, Ph.D.	50	Director

(1) Member of the Compensation Committee.

(2) Member of the Audit Committee.

(3) Member of the Nominating and Governance Committee.

Executive Officers

Praveen P. Tipirneni, M.D. has served as our President and Chief Executive Officer and a member of our board of directors since July 2015. Previously, he served as the Senior Vice President of Corporate Development and Global Strategy at Cubist Pharmaceuticals, Inc., a biotechnology company focused on antibiotics, from November 2002 to February 2015. Prior to Cubist Pharmaceuticals, Dr. Tipirneni also held management positions at Sun Microsystems, Inc., Covad Communications Group and Deltagen, Inc. Dr. Tipirneni received a B.A. in Mechanical Engineering from Massachusetts Institute of Technology, an M.D. from McGill University and an M.B.A. from the Wharton School of Business of the University of Pennsylvania. We believe that Dr. Tipirneni is qualified to serve on our board of directors because of his experience with biotechnology companies, including working with and serving in various executive positions in life sciences companies.

Robert E. Farrell, Jr., CPA has served as our Vice President of Finance and Operations and Treasurer since June 2015. From March 2015 to June 2015, Mr. Farrell worked as an independent consultant. From April 2009 to March 2015, Mr. Farrell served as Vice President of Finance and Administration and Treasurer of Genocea Biosciences Inc. Previously, Mr. Farrell served in various senior level financial positions at Oscient Pharmaceuticals Corp., Magen Biosciences, Inc. and NeoGenesis Pharmaceuticals, Inc. Mr. Farrell received a B.S. in Accounting from Bentley University.

William D. DeVaul, Esq. has served as our General Counsel and Secretary since February 2019. From May 2015 to February 2019, he served as Vice President, Head of Intellectual Property at Evelo Biosciences, Inc., a biotechnology company. Prior to Evelo, Mr. DeVaul served Cubist Pharmaceuticals in various positions from December 2003 to February 2015, including most recently as Deputy Chief

Intellectual Property Counsel. Mr. DeVaul earned a J.D. from Boston University School of Law and a B.A. in Biochemistry from Columbia University.

Bruce N. Rogers, Ph.D. has served as our Chief Scientific Officer since January 2016. From June 2014 to January 2016, Dr. Rogers served as the Head of Neuro-Opportunities at Pfizer Inc. Prior to that position, Dr. Rogers held positions of increasing responsibility within the medicinal chemistry organization at Pfizer Global R&D since August 2003. Dr. Rogers started his career in the private sector at Pharmacia & Upjohn Company LLC as a scientist from September 1998 to August 2003. Dr. Rogers received a B.A. in Chemistry from the University of Minnesota, a Ph.D. in Organic Chemistry from the University of California at Irvine and was a National Institutes of Health postdoctoral fellow at the University of California.

Alexey A. Lugovskoy, Ph.D. has served as our Chief Development Officer since January 2016. Previously, Dr. Lugovskoy served as a Vice President of Therapeutics of Merrimack Pharmaceuticals, Inc., a biopharmaceutical company, where he worked from June 2010 to January 2016. Prior to joining Merrimack, Dr. Lugovskoy served as Associate Director of Drug Discovery at Biogen Inc., a biotechnology company, where he worked from September 2001 to June 2010. Dr. Lugovskoy has been an Assistant Editor of the journal *mAbs* since December 2013. Dr. Lugovskoy received an Advanced Certificate for Executives in Management, Innovation and Technology from MIT Sloan School of Management, a Ph.D. in Biophysics from Harvard University and a M.Sc. in Molecular Biophysics and a B.Sc. in Mathematics and Physics from the Moscow Institute of Physics and Technology.

Non-Employee Directors

Gustav Christensen has served as a member of our board of directors since January 2016. Mr. Christensen was most recently the President and Chief Executive Officer and director at Dyax Corp., a biopharmaceutical company, where he worked from April 2007 to February 2016. Prior to joining Dyax, Mr. Christensen was a Managing Director at Apeiron Partners, LLC, a boutique life sciences firm, where he worked from 2005 until 2007. Mr. Christensen received his M.Sc. in Economics from the University of Aarhus (Denmark) and his M.B.A. from Harvard Business School. We believe that Mr. Christensen is qualified to serve on our board of directors due to his extensive management and business experience in the life sciences industry and in the commercialization of pharmaceutical products.

Barbara J. Dalton, Ph.D. has served as a member of our board of directors since June 2016. Since September 2007, Dr. Dalton has served as Vice President, WWBD and Senior Managing Partner of Pfizer Ventures, the venture capital arm of Pfizer Inc. Previously, Dr. Dalton served as Partner at EuclidSR Partners LP and President at SR One. Dr. Dalton earned a B.S. in General Science from Penn State and a Ph.D. in Microbiology and Immunology from Drexel University College of Medicine. We believe that Dr. Dalton is qualified to serve on our board of directors because of her strong biopharmaceutical director and investment experience.

Ramy Farid, Ph.D. has served as a member of our board of directors since June 2016. Since January 2017, Dr. Farid has served as the President and Chief Executive Officer at Schrödinger, LLC, a chemical simulation software company. Previously, from January 2002 to December 2016 Dr. Farid served in various roles at Schrödinger. Dr. Farid currently serves on the board of directors of Nimbus Therapeutics. Prior to Schrödinger, Dr. Farid was an Assistant Professor in the Chemistry Department at Rutgers University. Dr. Farid was also an NIH Postdoctoral Fellow in the Department of Biochemistry and Biophysics at the University of Pennsylvania. Dr. Farid received a B.S. in Chemistry from the University of Rochester and received his Ph.D. in Chemistry from the California Institute of Technology. We believe that Dr. Farid is qualified to serve on our board of directors because of his experience in the biopharmaceutical industry, including his expertise in drug discovery and development.

Vikas Goyal has served as a member of our board of directors since June 2016. Mr. Goyal is currently a Principal at S.R. One, Limited, the corporate venture capital arm of GlaxoSmithKline plc, in Cambridge, Massachusetts, where he manages investments in innovative drug discovery and development companies. He joined S.R. One, Limited in January 2011. Prior to joining S.R. One, Limited, Mr. Goyal was a consultant in the pharmaceutical and medical products practice at McKinsey and Company, a co-founder of

Extera Partners, where he advised public and private life sciences companies, and a business development manager at Infinity Pharmaceuticals, Inc. He received his B.A. in Neurobiology from Harvard University and his M.B.A. in Health Care Management from the Wharton School of the University of Pennsylvania. We believe that Mr. Goyal is qualified to serve on our board of directors because of his investing and operations experiences in the life sciences industry.

Nilesh Kumar, Ph.D. has served as a member of our board of directors since December 2018. Dr. Kumar has been a Partner at Novo Ventures (US), Inc., which provides consulting services to Novo Holdings A/S, a venture capital fund, since January 2017, and before that, a Senior Principle since April 2015. Prior to Novo Ventures, Dr. Kumar held various positions in the Merck KGaA family of companies since 2009, culminating in the position of Senior Investment Director, where he led venture investments and strategic licensing transactions in the field of oncology and autoimmune diseases. Dr. Kumar also serves on the boards of directors of several private companies. Dr. Kumar received a B.A. in Natural Sciences from Cambridge University, a Ph.D. in Chemistry from Harvard University and an M.B.A. from Harvard Business School. We believe that Dr. Kumar is qualified to serve on our board of directors because of his venture capital experience, his extensive experience in the pharmaceutical industry and his educational background.

Amir Nashat, Sc.D. previously served as a member of our board of directors from June 2015 through June 2016 and has served as a member of our board of directors since June 2017. Dr. Nashat is a managing partner at Polaris Partners, a venture capital firm, where he has worked since 2002. Dr. Nashat was also the founding Chief Executive Officer of Living Proof, Inc. and Sun Catalytix Corporation. Dr. Nashat currently represents Polaris as a director of aTyr Pharmaceuticals, Inc., Fate Therapeutics, Inc., Selecta Biosciences Inc., Scholar Rock Holding Corporation, and Syros Pharmaceuticals, Inc., as well as on the boards of directors of several private companies. Dr. Nashat also serves on the Partners Innovation Fund, the Investment Advisory Committee for The Engine at MIT, and helped launch the MIT Sandbox Innovation Fund as its active President. Dr. Nashat previously served on the Board of the New England Venture Capital Association. Dr. Nashat received an M.S. and B.S. in Materials Science and Mechanical Engineering from the University of California, Berkeley and a Sc.D. as a Hertz Fellow in Chemical Engineering at the Massachusetts Institute of Technology with a minor in Biology under Dr. Robert Langer. We believe that Dr. Nashat's biotechnology investment experience qualifies him to serve on our board of directors.

Timothy A. Springer, Ph.D. founded our company in August 2014 and has served as a scientific advisor to us and as a member of our board of directors since June 2015. Since 1989, Dr. Springer has served as the Latham Family Professor at Harvard Medical School. He has also served as Senior Investigator in the Program in Cellular and Molecular Medicine at Boston Children's Hospital since 2012, and as a Professor of Biological Chemistry and Molecular Pharmacology at Harvard Medical School and Professor of Medicine at Boston Children's Hospital since 2011. Dr. Springer was the Founder of LeukoSite, a biotechnology company acquired by Millennium Pharmaceuticals in 1999. Additionally, he is a founder and investor in Scholar Rock Holding Corporation and has served as a member of its board since October 2012. He has also served Selecta Biosciences Inc. as a scientific advisor since December 2008 and as a member of its board since June 2016. Dr. Springer is a member of the National Academy of Sciences and his honors include the Crafoord Prize, the American Association of Immunologists Meritorious Career Award, the Stratton Medal from the American Society of Hematology, and the Basic Research Prize from the American Heart Association. Dr. Springer received a B.A. in Biochemistry from the University of California, Berkeley, and a Ph.D. in Biochemistry and Molecular Biology from Harvard University. We believe that Dr. Springer is qualified to serve on our board of directors because of his extensive knowledge of the integrin field and his investment, business and board experience with biopharmaceutical companies.

Otello Stampacchia, Ph.D. has served as a member of our board of directors since December 2018. He has served as founder and Managing Director of Omega Funds since 2004. Previously, Dr. Stampacchia was in charge of life sciences direct investments at AlpInvest Partners B.V. from 2001 to 2003, and from 2000 to 2001, Dr. Stampacchia was the portfolio managing of the Lombard Odier Immunology Fund. Previously, Dr. Stampacchia was a member of the healthcare corporate finance and mergers and acquisitions team at Goldman Sachs Group, Inc. from 1997 to 2000, Before joining Goldman Sachs, Dr. Stampacchia helped

co-found the healthcare investment activities at Index Securities, now Index Ventures, Inc. Dr. Stampacchia is currently a member of the boards of directors of Replimune Group, Inc., Kronos Bio, Inc., Gossamer Bio, Inc. and ESSA Pharma, Inc. Previously, Dr. Stampacchia served on the boards of directors of several private companies. He has a Ph.D. degree in Molecular Biology from the University of Geneva and a European Ph.D. in Biotechnology (EDBT) from the European Association for Higher Education in Biotechnology. He has an M.S. in Genetics from Universa' degli Studi di Pavia. We believe that Dr. Stampacchia is qualified to serve on our board of directors because of his experience investing in life sciences companies and working with and serving on the boards of directors of various life sciences companies.

Election of Officers

Our executive officers are appointed by, and serve at the discretion of, our board of directors. There are no family relationships among any of our directors or executive officers.

Board Composition

Our board of directors currently consists of nine members. of our directors are independent within the meaning of the independent director guidelines of the Nasdaq Global Market, or Nasdaq. Pursuant to our current voting agreement and certificate of incorporation, Otello Stampacchia, Nilesh Kumar, Vikas Goyal, Barbara J. Dalton, Amir Nashat, Timothy A. Springer, Ramy Farid, Praveen P. Tipirneni, and Gustav Christensen have been designated to serve as members of our board. Otello Stampacchia and Nilesh Kumar were elected by the holders of our Series B convertible preferred stock. Vikas Goyal, Barbara J. Dalton, and Amir Nashat were elected by the holders of our Series A convertible preferred stock. Timothy A. Springer, Ramy Farid, Praveen P. Tipirneni, and Gustav Christensen were elected by the holders of our common stock and convertible preferred stock, voting together as a single class on an as-converted basis.

The voting agreement and the provisions of our current certificate of incorporation that govern the election and designation of our directors will terminate in connection with this offering, after which no contractual obligations will concern the election of our directors. Each of our current directors will continue to serve until the election and qualification of his or her successor, or until his or her earlier death, resignation or removal.

Classified Board of Directors

Upon the completion of this offering, our board of directors will be divided into three staggered classes of directors. At each annual meeting of stockholders, a class of directors will be subject to re-election for a three-year term. As a result, only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Our directors will be divided among the three classes as follows:

- the Class I directors will be , and and their terms will expire at the first annual meeting of stockholders held following the completion of the offering;
- the Class II directors will be , and and their terms will expire at the second annual meeting of stockholders held following the completion of the offering; and
- the Class III directors will be , and and their terms will expire at the third annual meeting of stockholders held following the completion of the offering.

Each director's term continues until the election and qualification of his or her successor, or his or her earlier death, resignation or removal. Our restated certificate of incorporation and restated bylaws that will be in effect upon the completion of this offering authorize only our board of directors to fill vacancies on our board of directors. Any increase or decrease in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. This classification of our board of directors may have the effect of delaying or preventing changes in control of

our company. See the section entitled "Description of Capital Stock — Anti-Takeover Provisions — Restated Certificate of Incorporation and Restated Bylaw Provisions."

Director Independence

In connection with this offering, we intend to apply to have our common stock approved for listing on Nasdaq. Under the rules of Nasdaq, independent directors must comprise a majority of a listed company's board of directors within a specified period following the completion of this offering. In addition, the rules of Nasdaq require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and governance committees be independent. Under the rules of Nasdaq, a director will only qualify as an "independent director" if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors or any other board committee: (i) accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries; or (ii) be an affiliated person of the listed company or any of its subsidiaries. We intend to satisfy the audit committee independence requirements of Rule 10A-3 as of the completion of this offering. Additionally, compensation committee members must not have a relationship with us that is material to the director's ability to be independent from management in connection with the duties of a compensation committee member.

Our board of directors has undertaken a review of the independence of each director and considered whether each director has a material relationship with us that could compromise his ability to exercise independent judgment in carrying out his responsibilities. As a result of this review, our board of directors determined that all of our directors, except for , are "independent directors" as defined under the applicable rules and regulations of the Securities and Exchange Commission, or SEC, and the listing requirements and rules of Nasdaq. In making these determinations, our board of directors reviewed and discussed information provided by the directors and us with regard to each director's business and personal activities and relationships as they may relate to us and our management, including the beneficial ownership of our capital stock by each non-employee director and the transactions involving them described in the section entitled "Certain Relationships and Related Party Transactions."

Committees of the Board of Directors

Our board of directors has an audit committee, a compensation committee and a nominating and governance committee, each of which will have the composition and responsibilities described below as of the completion of this offering. Each of the below committees has a written charter approved by our board of directors. Upon completion of this offering, copies of each charter will be posted on the investor relations section of our website. Members serve on these committees will serve until their resignation or until otherwise determined by our board of directors.

Audit Committee

Our audit committee is comprised of , with as the chairman of our audit committee. The composition of our audit committee meets the requirements for independence under the current Nasdaq and SEC rules and regulations. Each member of our audit committee is financially literate. In addition, our board of directors has determined that is an "audit committee financial expert" as defined in Item 407(d)(5)(ii) of Regulation S-K promulgated under the Securities Act of 1933, as amended. This designation does not impose on him any duties, obligations or liabilities that are greater than are generally imposed on members of our audit committee and our board of directors. Our audit committee is directly responsible for, among other things:

- selecting and hiring our independent registered public accounting firm;

- the qualifications, independence and performance of our independent auditors;
- the preparation of the audit committee report to be included in our annual proxy statement;
- our compliance with legal and regulatory requirements;
- our accounting and financial reporting processes, including our financial statement audits and the integrity of our financial statements; and
- reviewing and approving related-person transactions.

Compensation Committee

Our compensation committee is comprised of , with as the chairman of our compensation committee. Each member of our compensation committee is a non-employee director, as defined by Rule 16b-3 promulgated under the Exchange Act and meets the requirements for independence under the current Nasdaq listing standards and SEC rules and regulations. Our compensation committee is responsible for, among other things:

- evaluating, recommending, approving and reviewing executive officer compensation arrangements, plans, policies and programs;
- evaluating and recommending non-employee director compensation arrangements for determination by our board of directors;
- administering our cash-based and equity-based compensation plans; and
- overseeing our compliance with regulatory requirements associated with the compensation of directors, officers and employees.

Nominating and Governance Committee

Our nominating and governance committee is comprised of , and , with as the chairman of our nominating and governance committee. Each member of our nominating and governance committee meets the requirements for independence under the current Nasdaq listing standards. Our nominating and governance committee is responsible for, among other things:

- identifying, considering and recommending candidates for membership on our board of directors;
- overseeing the process of evaluating the performance of our board of directors; and
- advising our board of directors on other corporate governance matters.

Compensation Committee Interlocks and Insider Participation

None of the current members of our compensation committee has at any time been one of our officers or employees. Dr. Tipirneni, our President and Chief Executive Officer and a member of our board of directors, was a member of our Compensation Committee until April 2019. None of our executive officers has served as a member of the board of directors, or as a member of the compensation or similar committee, of any entity that has one or more executive officers who served on our board of directors or compensation committee during the year ended December 31, 2018. Prior to establishing the compensation committee, our full board of directors made decisions relating to the compensation of our officers.

Scientific Advisory Board

We have established a scientific advisory board composed of leading academic and industry scientists. We seek advice and input from these scientists on an ad hoc basis, individually or as a group, to provide scientific and clinical feedback and advice related to our research and development platform and programs. The members of our advisory board consist of experts across a range of key disciplines relevant to our programs. Other than Timothy A. Springer, our advisors are not our employees or directors and have no decision-making authority over our activities. Our advisors may have commitments to, or consulting or advisory contracts with, other entities that may limit their availability to us. In addition, our advisors may have arrangements with other companies to assist those companies in developing products or technologies that may compete with ours. All of our advisors are affiliated with other entities and devote only a small portion of their time to us. Our advisors are retained under consulting agreements and receive cash

compensation based upon consulting services rendered. In addition, in the past we have granted stock options to purchase common stock to certain advisory members for their service.

Code of Business Conduct and Ethics

Prior to the completion of this offering, our board of directors will adopt a code of business conduct and ethics that applies to all of our employees, officers and directors, including our Chief Executive Officer and other executive and senior officers. The full text of our code of business conduct and ethics will be posted on the investor relations section of our website. The reference to our website address in this prospectus does not include or incorporate by reference the information on our website into this prospectus. We intend to disclose future amendments to certain provisions of our code of business conduct and ethics, or waivers of these provisions, on our website or in public filings to the extent required by the applicable rules.

Non-Employee Director Compensation

The following table presents the total compensation earned by each of our non-employee directors in the year ended December 31, 2018. Our President and Chief Executive Officer, Dr. Tipirneni, receives no compensation for his service as a director. Other than as described below, none of our non-employee directors received any fees or reimbursement of any expenses (other than customary expenses in connection with the attendance of meetings of our board of directors) or any equity or non-equity awards in the year ended December 31, 2018.

Name	Fees Earned or Paid in Cash ($)	All Other Compensation ($)	Total ($)
Gustav Christensen	40,000[1]	—	40,000
Barbara J. Dalton, Ph.D.	—		
Ramy Farid, Ph.D	—	—	—
Vikas Goyal	—	—	—
Nilesh Kumar, Ph.D.	—	—	—
Amir Nashat	—	—	—
Timothy A. Springer, Ph.D.	—	80,000[2]	80,000
Otello Stampacchia, Ph.D.	—	—	—

(1) In 2018, Mr. Christensen received approximately $40,000 in fees, paid quarterly, pursuant to a consulting agreement entered into with us in 2016.

(2) In 2018, Dr. Springer received $80,000 pursuant to a consulting agreement entered into with us in 2015. For additional information regarding Dr. Springer's consulting arrangement with us, see the section entitled "Certain Relationships and Related Party Transactions — Consulting Agreement with Timothy A. Springer."

Prior to this offering, we did not have a formal policy to provide any cash or equity compensation to our non-employee directors for their service on our board of directors or committees of our board of directors. In connection with this offering, our board of directors expects to approve annual non-employee director compensation, which will take effect following the completion of this offering.

EXECUTIVE COMPENSATION

The following tables and accompanying narrative disclosure set forth information about the compensation earned by our named executive officers during the year ended December 31, 2018. Our named executive officers, who are our principal executive officer and the two most highly-compensated executive officers (other than our principal executive officer) serving as executive officers as of December 31, 2018, were:

- Praveen P. Tipirneni, M.D., President and Chief Executive Officer;
- Bruce N. Rogers, Ph.D., Chief Scientific Officer; and
- Alexey A. Lugovskoy, Ph.D., Chief Development Officer.

Summary Compensation Table

The following table presents summary information regarding the total compensation for services rendered in all capacities that was awarded to and earned by our named executive officers during the year ended December 31, 2018.

Name and Principal Position	Salary($)	Bonus ($)[1]	Stock Awards ($)[2]	Option Awards ($)[3]	Non-equity Incentive Plan Compensation ($)[4]	All Other Compensation ($)[5]	Total($)
Praveen P. Tipirneni, M.D. *President and Chief Executive Officer*	402,097	110,000	329,708	1,266,568	208,700	8,250	2,317,073
Bruce N. Rogers, Ph.D. *Chief Scientific Officer*	320,671	60,000	111,533	603,526	124,700	8,250	1,220,430
Alexey A. Lugovskoy, Ph.D. *Chief Development Officer*	309,910	60,000	78,418	401,383	120,600	8,250	970,311

(1) The amounts reported in the Bonus column reflect special discretionary bonuses paid in January 2019 with respect to business development success in 2018.

(2) The amounts reported in the Stock Awards column for fiscal year 2018 reflect the incremental fair value associated with the December 5, 2018 exchange of incentive units in Morphic Holding, LLC previously awarded to our named executive officers into shares of our common stock and restricted stock in connection with the conversion of Morphic Holding, LLC to a corporation in the Reorganization (as discussed in greater detail above in "Reorganization"), with such value computed in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718, or ASC 718. The assumptions used in calculating the incremental fair value of the stock awards reported in the Stock Awards column are set forth in Note 7 to the audited consolidated financial statements included in this prospectus.

(3) The amounts reported in the Option Awards column represent the grant date fair value of the stock options granted to the named executive officers during the year ended December 31, 2018 as computed in accordance with ASC 718. The assumptions used in calculating the grant date fair value of the stock options reported in the Option Awards column are set forth in Note 7 to the audited consolidated financial statements included in this prospectus. Note that the amounts reported in this column reflect the accounting cost for these stock options, and do not correspond to the actual economic value that may be received by the named executive officers from the options.

(4) For additional information regarding the non-equity incentive plan compensation, see "— Non-equity Incentive Plan Awards."

(5) The amounts reported in the All Other Compensation column reflect 401(k) contributions paid by us on behalf of each named executive officer.

Non-equity Incentive Plan Awards

Annual bonuses for our executive officers are based on the achievement of corporate and, for all of the executive officers other than our Chief Executive Officer, individual performance objectives. For the 2018 bonuses, the corporate performance objectives included the delivery of a development candidate, the completion of a target level of financing, and the establishment of development infrastructure capable of supporting advancement of the development candidates into the clinic. In January 2019, based on the achievement of these corporate performance objectives and satisfaction of individual performance goals, our board of directors determined to award bonuses equal to 130% of target.

Outstanding Equity Awards at 2018 Fiscal Year-End Table

The following table provides information regarding each unexercised stock option and share of restricted common stock held by our named executive officers as of December 31, 2018.

		Option Awards				Stock Awards[1]	
Name	Vesting Commencement Date of Option Award or Stock Award	Number of Securities Underlying Unexercised Options Exercisable	Number of Securities Underlying Unexercised Options Unexercisable	Option Exercise Price ($)	Option Expiration Date	Number of Shares of Restricted Stock That Have Not Vested (#)	Market Value of Shares of Restricted Stock That Have Not Vested ($)[3]
Praveen P. Tipirneni	12/14/2018[2]	—	2,703,000	0.74	12/14/2028		
	7/1/2015[4]					309,015	228,671
	12/13/2016[5]					542,500	401,450
	12/11/2017[5]					356,250	263,625
Bruce N. Rogers	12/14/2018[2]	—	1,287,000	0.74	12/14/2028		
	1/18/2016[4]					85,271	63,101
	12/13/2016[5]					207,500	153,550
	12/11/2017[5]					309,000	228,660
Alexey A. Lugovskoy	12/14/2018[2]	—	856,000	0.74	12/14/2028		
	1/5/2016[4]					40,467	29,946
	12/13/2016[5]					191,000	141,340
	12/11/2017[5]					173,250	128,205

(1) Stock award totals represent shares of our restricted common stock received by each named executive officer upon the exchange of his incentive units in Morphic Holding, LLC in connection with the conversion of Morphic Holding, LLC into a corporation, or the Reorganization. The shares of restricted common stock are subject to acceleration upon a qualifying termination of employment, which will be described in greater detail in the Employee Offer Letters section below.

(2) All of the outstanding options were granted under our 2018 Plan and vest in 48 equal monthly installments over the four-year period following the vesting commencement date. The options are also subject to acceleration of vesting upon a qualifying termination of employment, which will be described in greater detail in the Employee Offer Letters section below.

(3) There was no public market for our common stock as of December 31, 2018. The fair market value of our common stock as of December 31, 2018, as determined by an independent valuation, was $0.74 per share.

(4) The shares of restricted common stock vest as follows: 25% vest on the one-year anniversary of the vesting commencement date, with the remaining 75% vesting in equal monthly installments for the next 36 months thereafter.

(5) The shares of restricted common stock vest as follows: 1/48th of the shares vest in 48 equal monthly installments over the four-year period following the vesting commencement date.

Employee Offer Letters

We intend to enter into amended and restated offer letters with each of our named executive officers in connection with the offering. We expect that each of these offer letters will provide for at-will employment and will include each named executive officer's base salary, a discretionary annual incentive bonus opportunity, standard employee benefit plan participation and an initial equity award. We also expect to enter into Change in Control and Severance Agreements with each of our named executive officers, which agreements will provide for severance benefits upon certain qualifying terminations of employment, including in connection with a change in control of our company. It is expected that these Change in Control and Severance Agreements will supersede and replace any existing severance entitlements of our named executive officers. Each of these arrangements will be approved by our compensation committee or our board of directors. In addition, each of our named executive officers has executed a form of our standard Employee Non-Disclosure, Non-Competition and Assignment of Intellectual Property Agreement.

2018 Stock Incentive Plan

We maintain the 2018 Plan. The purposes of the 2018 Plan are to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentive to employees, directors and consultants and to promote the success of our business. The material terms of the 2018 Plan are summarized below:

Share Reserve. Subject to adjustment as provided in the 2018 Plan, the maximum number of shares of common stock which may be issued under the 2018 Plan is 13,045,265 shares plus an additional number of shares equal to the number of shares of common stock subject to awards granted prior to the effectiveness of the 2018 Plan that are forfeited to or otherwise purchased by us, up to a maximum of 9,222,634 shares. 2,667,369 shares remained available for grant under the 2018 Plan as of March 31, 2019. As of March 31, 2019, no options to purchase shares had been exercised and options to purchase 10,417,696 shares remained outstanding, with an exercise price of $0.74 per share.

Administration. Our 2018 Plan is administered by our board of directors or a committee appointed by our board of directors. Subject to the terms of the 2018 Plan, our board of directors has the authority to, among other things, select the persons to whom awards will be granted, construe and interpret our 2018 Plan as well as to prescribe, amend and rescind rules and regulations relating to the 2018 Plan and awards granted thereunder.

Eligibility. Pursuant to the 2018 Plan, we may grant incentive stock options only to our employees (including officers and directors who are also employees). We may grant non-statutory stock options to our employees (including officers and directors who are also employees), non-employee directors and consultants.

Options. The 2018 Plan provides for the grant of both (i) incentive stock options, which are intended to qualify for tax treatment as set forth under Section 422 of the Internal Revenue Code, as amended, or the Code, and (ii) non-statutory stock options to purchase shares of our common stock, each at a stated exercise price. The exercise price of each stock option must be at least equal to the fair market value of our common stock on the date of grant. However, the exercise price of any stock option granted to an individual who owns more than ten percent of the total combined voting power of all classes of our capital stock must be at least equal to 110% of the fair market value of our common stock on the date of grant.

The maximum permitted term of options granted under our 2018 Plan is ten years from the date of grant, except that the maximum permitted term of incentive stock options granted to an individual who owns more than ten percent of the total combined voting power of all classes of our capital stock is five years from the date of grant.

Restricted Stock Awards. In addition, the 2018 Plan provides for the issuance of restricted stock awards pursuant to which the holder may purchase restricted shares of our common stock. Among other terms and

conditions, we may retain an option to repurchase the restricted stock within 90 days of the holder's termination of service. No restricted stock awards have been granted under the 2018 Plan and it is not expected that any such awards will be granted prior to the offering.

Limited Transferability. Unless otherwise determined by our board of directors, options and restricted stock awards generally may not be transferred or assigned in any manner other than by will or the laws of descent and distribution.

Change of Control. In the event of a change in control transaction (as defined in the 2018 Plan), the 2018 Plan provides that our board of directors or the board of any successor corporation has the discretion to take any of the following actions with respect to some or all outstanding equity awards: assumption or substitution of awards, immediate termination of the awards if not exercised within a specified time frame, repurchase restricted stock awards at cost, cash payment of the awards or partial or full accelerated vesting of such equity awards.

Adjustments. In the event of a merger, consolidation, sale of all or substantially all of our assets, reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split or other similar transaction, our board of directors may adjust the number and class of shares that may be delivered under 2018 Plan and/or the number, class and price of shares covered by each outstanding award, in order to prevent diminution or enlargement of benefits or potential benefits intended to be made available under the 2018 Plan or otherwise as required by applicable law.

Termination. We expect to terminate the 2018 Plan and cease issuing awards thereunder upon the effective date of our 2019 Equity Incentive Plan (described below), which is the date immediately prior to the date of the effectiveness of the registration statement of which this prospectus forms a part. Any outstanding options granted under the 2018 Plan will remain outstanding, subject to the terms of our 2018 Plan and applicable award agreements, until such awards are exercised or until they terminate or expire by their terms.

Restricted Stock Agreements

On December 5, 2018, in connection with the Reorganization, all of our then-outstanding vested and unvested incentive units were converted on a one-for-one basis into shares of common stock and restricted common stock, respectively. We entered into restricted stock agreements with each holder of incentive units, which restricted stock agreements provided for the same vesting terms as applied to the incentive units immediately prior to the Reorganization. As of March 31, 2019, 9,182,834 shares of common stock and restricted shares of common stock had been granted pursuant to the restricted stock agreements, of which 4,243,555 remain outstanding as restricted shares of common stock that are subject to vesting.

Vesting. The vesting schedule is set forth in each restricted stock agreement and certain restricted stock agreements provide for acceleration of vesting upon a qualifying termination of employment in connection with a change in control. Additionally, the Board of Directors has the discretion to accelerate any vesting dates or waiver any of the requirements for vesting. In the event the holder of a restricted stock award ceases to provide services as our active employee or consultant before the shares of restricted common stock vest, than we will have, for a period of 90 days from the date of termination of services, the right to purchase, or the Repurchase Option, any or all shares that are unvested shares as of such termination date, with the Repurchase Option deemed to be automatically exercised on the 90th day of such termination date, absent our notification to the holder that such Repurchase Option will not be exercised as to some or all of the unvested shares. The repurchase price per share of restricted common stock is $0.0001 (subject to appropriate adjustments).

Transferability. Shares of restricted common stock may not be transferred in any manner other than for bona-fide estate planning purposes or by will or the laws of descent and distribution. Restrictions on transfer also apply to vested shares, as set forth in the restricted stock agreements.

Adjustments. The restricted stock agreements provide that the shares of restricted common stock shall also include any shares of our capital stock issued by stock dividend, stock split, recapitalization, merger, combination, reorganization or otherwise.

2019 Equity Incentive Plan

We intend to adopt our 2019 Equity Incentive Plan, or the 2019 Plan, that will become effective on the date immediately prior to the date of the effectiveness of the registration of which this prospectus forms a part and will serve as the successor to our 2018 Plan. Our 2019 Plan authorizes the award of stock options, restricted stock awards, or RSAs, stock appreciation rights, or SARs, restricted stock units, or RSUs, cash awards, performance awards and stock bonus awards. We have initially reserved shares of our common stock, plus any reserved shares not issued or subject to outstanding grants under the 2018 Plan on the effective date of the 2019 Plan, for issuance pursuant to awards granted under our 2019 Plan. The number of shares reserved for issuance under our 2019 Plan will increase automatically on January 1 of each of 2020 through 2029 by the number of shares equal to the lesser of % of the aggregate number of outstanding shares of our common stock as of the immediately preceding December 31, or a number as may be determined by our board of directors.

In addition, the following shares will again be available for issuance pursuant to awards granted under our 2019 Plan:

- shares subject to options or SARs granted under our 2019 Plan that cease to be subject to the option or SAR for any reason other than exercise of the option or SAR;
- shares subject to awards granted under our 2019 Plan that are subsequently forfeited or repurchased by us at the original issue price;
- shares subject to awards granted under our 2019 Plan that otherwise terminate without such shares being issued;
- shares subject to awards granted under our 2019 Plan that are surrendered, cancelled or exchanged for cash or a different award (or combination thereof);
- shares issuable upon the exercise of options or subject to other awards granted under our 2018 Plan that cease to be subject to such options or other awards, by forfeiture or otherwise, after the termination of the 2018 Plan;
- shares of common stock subject to awards granted prior to the effectiveness of the 2018 Plan that are forfeited to or otherwise repurchased by us;
- shares subject to awards granted under our 2018 Plan that are forfeited or repurchased by us at the original price after the termination of the 2018 Plan; and
- shares subject to awards under our 2018 Plan or our 2019 Plan that are used to pay the exercise price of an option or withheld to satisfy the tax withholding obligations related to any award.

Administration. Our 2019 Plan is expected to be administered by our compensation committee, or by our board of directors acting in place of our compensation committee. Subject to the terms and conditions of the 2019 Plan, the compensation committee will have the authority, among other things, to select the persons to whom awards may be granted, construe and interpret our 2019 Plan as well as to determine the terms of such awards and prescribe, amend and rescind the rules and regulations relating to the plan or any award granted thereunder. The 2019 Plan provides that the board or compensation committee may delegate its authority, including the authority to grant awards, to one or more executive officers to the extent permitted by applicable law, provided that awards granted to non-employee directors may only be determined by our board of directors.

Eligibility. Our 2019 Plan provides for the grant of awards to our employees, directors, consultants, independent contractors and advisors. No non-employee director may receive awards under our 2019 Plan that exceed $ in a calendar year or $ in the calendar year of his or her initial services as a non-employee director with us.

Options. The 2019 Plan provides for the grant of both incentive stock options intended to qualify under Section 422 of the Code, and non-statutory stock options to purchase shares of our common stock at a stated exercise price. Incentive stock options may only be granted to employees, including officers and directors who are also employees. The exercise price of stock options granted under the 2019 Plan must be at least equal to the fair market value of our common stock on the date of grant. Incentive stock options granted to an individual who holds, directly or by attribution, more than ten percent of the total combined voting power of all classes of our capital stock must have an exercise price of at least 110% of the fair market value of our common stock on the date of grant. Subject to stock splits, dividends, recapitalizations or similar events, no more than shares may be issued pursuant to the exercise of incentive stock options granted under the 2019 Plan.

Options may vest based on service or achievement of performance conditions. Our compensation committee may provide for options to be exercised only as they vest or to be immediately exercisable, with any shares issued on exercise being subject to our right of repurchase that lapses as the shares vest. The maximum term of options granted under our 2019 Plan is ten years from the date of grant, except that the maximum permitted term of incentive stock options granted to an individual who holds, directly or by attribution, more than ten percent of the total combined voting power of all classes of our capital stock is five years from the date of grant.

Restricted Stock Awards. An RSA is an offer by us to sell shares of our common stock subject to restrictions, which may lapse based on the satisfaction of service or achievement of performance conditions. The price, if any, of an RSA will be determined by the compensation committee. Holders of RSAs, unlike holders of options, will have the right to vote and any dividends or stock distributions paid pursuant to RSAs will be accrued and paid when the restrictions on such shares lapse. Unless otherwise determined by the compensation committee at the time of award, vesting will cease on the date the participant no longer provides services to us and unvested shares may be forfeited to or repurchased by us.

Stock Appreciation Rights. A SAR provides for a payment, in cash or shares of our common stock (up to a specified maximum of shares, if determined by our compensation committee), to the holder based upon the difference between the fair market value of our common stock on the date of exercise and a predetermined exercise price, multiplied by the number of shares. The exercise price of a SAR must be at least the fair market value of a share of our common stock on the date of grant. SARs may vest based on service or achievement of performance conditions, and may not have a term that is longer than ten years from the date of grant.

Restricted Stock Units. RSUs represent the right to receive shares of our common stock at a specified date in the future, and may be subject to vesting based on service or achievement of performance conditions. Payment of earned RSUs will be made as soon as practicable on a date determined at the time of grant, and may be settled in cash, shares of our common stock or a combination of both. No RSU may have a term that is longer than ten years from the date of grant.

Performance Awards. Performance awards granted to pursuant to the 2019 Plan may be in the form of a cash bonus, or an award of performance shares or performance units denominated in shares of our common stock that may be settled in cash, property or by issuance of those shares subject to the satisfaction or achievement of specified performance conditions.

Stock Bonus Awards. A stock bonus award provides for payment in the form of cash, shares of our common stock or a combination thereof, based on the fair market value of shares subject such award as determined by our compensation committee. The awards may be granted as consideration for services already rendered, or at the discretion of the compensation committee, may be subject to vesting restrictions based on continued service or performance conditions.

Cash Awards. A cash award is an award that is denominated in, or payable to an eligible participant solely in, cash.

Dividend Equivalents Rights. Dividend equivalent rights may be granted at the discretion of our compensation committee, and represent the right to receive the value of dividends, if any, paid by us in respect of the number of shares of our common stock underlying an award. Dividend equivalent rights will be subject to the same vesting or performance conditions as the underlying award and will be paid only at such time as the underlying award has become fully vested. Dividend equivalent rights may be settled in cash, shares or other property, or a combination of thereof as determined by the compensation committee.

Corporate Transaction. In the event of a corporate transaction (as defined in the 2019 Plan) awards may be assumed, converted, replaced, or substituted by the successor corporation, which assumption, conversion, replacement or substitution will be binding on all participants. In the event of a substitution, the successor corporation may substitute equivalent awards or provide substantially similar consideration to participants as was provided to stockholders (after taking into account the existing provisions of the awards). In the event such successor or acquiring corporation (if any) refuses to assume, convert, replace, or substitute awards, as provided above, pursuant to a corporate transaction, then notwithstanding any other provision in the 2019 Plan to the contrary, such awards shall have their vesting accelerate as to all shares or cash subject to such awards (and any applicable right of repurchase shall fully lapse) immediately prior to the corporate transaction and all such awards shall expire on such corporate transaction at such time and on such conditions as our board of directors determine. In addition, in the event such successor or acquiring corporation (if any) refuses to assume, convert, replace, or substitute awards, as provided above, pursuant to a corporate transaction, the committee will notify the participant in writing or electronically that such participant's Award will, if exercisable, be exercisable for a period of time determined by the committee in its sole discretion, and such award will terminate upon the expiration of such period. Awards need not all be treated in the same manner in a corporate transaction, and treatment may vary from award to award and/or from participant to participant.

Adjustment. In the event of a change in the number of outstanding shares of our common stock without consideration by reason of a stock dividend, extraordinary dividend or distribution, recapitalization, stock split, reverse stock split, subdivision, combination, consolidation reclassification, spin-off or similar change in our capital structure, appropriate proportional adjustments will be made to the number of shares reserved for issuance under our 2019 Plan; the exercise prices, number and class of shares subject to outstanding options or SARs; the number and class of shares subject to other outstanding awards; and any applicable maximum award limits with respect to incentive stock options.

Clawback; Transferability. All awards will be subject to clawback or recoupment pursuant to any compensation clawback or recoupment policy adopted by our board of directors or required by law during the term of service of the award holder, to the extent set forth in such policy or applicable agreement. Except in limited circumstances, awards granted under our 2019 Plan may generally not be transferred in any manner prior to vesting other than by will or by the laws of descent and distribution.

Amendment and Termination. Our board of directors may amend our 2019 Plan at any time, subject to stockholder approval as may be required. Our 2019 Plan will terminate ten years from the date our board of directors adopts the plan, unless it is terminated earlier by our board of directors. No termination or amendment of the 2019 Plan may adversely affect any then-outstanding award without the consent of the affected participant, except as is necessary to comply with applicable laws.

2019 Employee Stock Purchase Plan

We intend to adopt a 2019 Employee Stock Purchase Plan, or ESPP, that will become effective upon the effectiveness of the registration statement of which this prospectus forms a part in order to enable eligible employees to purchase shares of our common stock with accumulated payroll deductions. Our ESPP is intended to qualify under Section 423 of the Code.

Shares Available. We have initially reserved shares of our common stock for sale under our ESPP. The aggregate number of shares reserved for sale under our ESPP will increase automatically on January 1st of each of the first ten calendar years after the effective date by the number of shares equal to the lesser of % of the total outstanding shares of our common stock as of the immediately preceding December 31 (rounded to the nearest whole share) or a number of shares as may be determined by our board of directors in any particular year. The aggregate number of shares issued over the term of our ESPP, subject to stock-splits, recapitalizations or similar events, may not exceed shares of our common stock.

Administration. Our compensation committee will administer our ESPP subject to the terms and conditions of the ESPP. Among other things, the compensation committee will have the authority to determine eligibility for participation in the ESPP, designate separate offerings under the plan, and construe, interpret and apply the terms of the plan.

Eligibility. Employees eligible to participate in any offering pursuant to the ESPP generally include any employee that is employed by us or certain of our designated subsidiaries at the beginning of the offering period. However, our compensation committee may determine that employees who are customarily employed for 20 hours or less per week or for five months or less in a calendar year may not be eligible to participate in the ESPP. In addition, any employee who owns (or is deemed to own as a result of attribution) 5% or more of the total combined voting power or value of all classes of our capital stock, or the capital stock of one of our qualifying subsidiaries, or who will own such amount as a result of participation in the ESPP, will not be eligible to participate in the ESPP. The compensation committee may impose additional restrictions on eligibility from time to time.

Offerings. Under our ESPP, eligible employees will be offered the option to purchase shares of our common stock at a discount over a series of offering periods. Each offering period may itself consist of one or more purchase periods. No offering period may be longer than 27 months.

Participation. Participating employees will be able to purchase the offered shares of our common stock by accumulating funds through payroll deductions. Participants may select a rate of payroll deduction between 1% and 15% of their compensation. However, a participant may not purchase more than shares during any one purchase period, and may not subscribe for more than $25,000 in fair market value of shares of our common stock (determined as of the date the offering period commences) in any calendar year in which the offering is in effect. Our compensation committee, in its discretion, may set a lower maximum amount of shares which may be purchased.

The purchase price for shares of our common stock purchased under the ESPP will be 85% of the lesser of the fair market value of our common stock on (i) the first trading day of the applicable offering period or (ii) the last trading day of each purchase period in the applicable offering period.

Once an employee becomes a participant in an offering period, the participant will be automatically enrolled in each subsequent offering period at the same contribution level. A participant may reduce his or her contribution in accordance with procedures set forth by the compensation committee and may withdraw from participation in the ESPP at any time prior the end of an offering period, or such other time as may be specified by the compensation committee. Upon withdrawal, the accumulated payroll deductions will be returned to the participant without interest.

Adjustments upon Recapitalization. If the number of outstanding shares of our common stock is changed by stock dividend, recapitalization, stock split, reverse stock split, subdivision, combination, reclassification or similar change in our capital structure without consideration, then our compensation committee will proportionately adjust the number and class of common stock that is available under the ESPP, the purchase price and number of shares any participant has elected to purchase as well as the maximum number of shares which may be purchased by participants.

Change of Control. If we experience a change of control transaction, any offering period that commenced prior to the closing of the proposed change of control transaction will be shortened and terminated on a new purchase date. The new purchase date will occur on or prior to the closing of the proposed change of control transaction, and our ESPP will then terminate on the closing of the proposed change of control.

Transferability. A participant may not assign, transfer, pledge or otherwise dispose of payroll deductions credited to his or her account, or any rights with regard to an election to purchase shares pursuant to the ESPP other than by will or the laws of descent or distribution.

Amendment; Termination. The compensation committee may amend, suspend or terminate the ESPP at any time without stockholder consent, except as required by law. Our ESPP will continue until the earlier to occur of (a) termination of the ESPP by the Board, (b) issuance of all of the shares reserved for issuance under the ESPP, or (c) the tenth anniversary of the effective date under the ESPP.

401(k) Plan

We sponsor a retirement savings plan that is intended to qualify for favorable tax treatment under Section 401(a) of the Code, and contains a cash or deferred feature that is intended to meet the requirements of Section 401(k) of the Code. Participants may make pre-tax and certain after-tax (Roth) salary deferral contributions to the plan from their eligible earnings up to the statutorily prescribed annual limit under the Code. Participants who are 50 years of age or older may contribute additional amounts based on the statutory limits for catch-up contributions. Participant contributions are held in trust as required by law. No minimum benefit is provided under the plan. An employee's interest in his or her salary deferral contributions is 100% vested when contributed. We have elected to match contributions equal to 50% of an employee's elective deferrals, with a cap of 6% of eligible earnings.

Other Benefits

Our named executive officers are eligible to participate in our employee benefit plans on the same basis as our other employees, including our health and welfare plans.

Limitations on Liability and Indemnification Matters

Our restated certificate of incorporation that will become effective in connection with the completion of this offering contains provisions that limit the liability of our directors for monetary damages to the fullest extent permitted by the Delaware General Corporation Law, or DGCL. Consequently, our directors will not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duties as directors, except liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the DGCL; or
- any transaction from which the director derived an improper personal benefit.

Our restated certificate of incorporation and our restated bylaws that will become effective in connection with the completion of this offering require us to indemnify our directors and officers to the maximum extent not prohibited by the DGCL and allow us to indemnify other employees and agents as set forth in the DGCL.

We have entered, and intend to continue to enter, into separate indemnification agreements with our directors, officers and certain of our key employees, in addition to the indemnification provided for in our restated certificate of incorporation and restated bylaws. These agreements, among other things, require us to indemnify our directors, officers and key employees for certain expenses, including attorneys' fees, judgments, penalties, fines and settlement amounts actually incurred by these individuals in any action or

proceeding arising out of their service to us or any of our subsidiaries or any other company or enterprise to which these individuals provide services at our request. Subject to certain limitations, our indemnification agreements also require us to advance expenses incurred by our directors, officers and key employees for the defense of any action for which indemnification is required or permitted.

We believe that these indemnification provisions and agreements are necessary to attract and retain qualified directors, officers and key employees. We also maintain directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our restated certificate of incorporation and restated bylaws may discourage stockholders from bringing a lawsuit against our directors and officers for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions.

At present, there is no pending litigation or proceeding involving any of our directors or executive officers as to which indemnification is required or permitted, and we are not aware of any threatened litigation or proceeding that may result in a claim for indemnification.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, or Securities Act, may be permitted to directors, executive officers or persons controlling us, we have been informed that, in the opinion of the Securities and Exchange Commission, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

In addition to the compensation arrangements, including employment, termination of employment and change in control arrangements, with our directors and executive officers, including those discussed in the sections entitled "Management" and "Executive Compensation," the following is a description of each transaction since January 1, 2016 and each currently proposed transaction in which:

- we have been or are to be a participant;
- the amounts involved exceeded or will exceed the lesser of $120,000 and 1% of our total assets; and
- any of our directors, executive officers or holders of more than 5% of our capital stock, or an affiliate or immediate family member of the foregoing persons, had or will have a direct or indirect material interest.

Other than as described below, there have not been, nor are there any currently proposed, transactions or series of similar transactions to which we have been or will be a party other than compensation arrangements, which are described where required under the section entitled "Executive Compensation."

Series B Convertible Preferred Stock Financing

In September 2018, we sold an aggregate of 61,538,454 shares of our Series B convertible preferred stock at a purchase price of $1.30 per share for an aggregate purchase price of approximately $80.0 million. Each share of our Series B convertible preferred stock will convert automatically into one share of our common stock upon the completion of this offering.

The purchasers of our Series B convertible preferred stock are entitled to specified registration rights. For additional information, see "Description of Capital Stock — Registration Rights." The following table summarizes the Series B convertible preferred stock purchased by members of our board of directors or their affiliates and holders of more than 5% of our outstanding capital stock. The terms of these purchases were the same for all purchasers of our Series B convertible preferred stock. Please refer to the section titled "Principal Stockholders" for more details regarding the shares held by these entities.

Name of Stockholder	Shares of Series B Convertible Preferred Stock	Total Purchase Price ($)
Artal International SCA[1]	7,692,307	9,999,999
Entities related to EcoR1[2]	7,692,307	9,999,999
S.R. One, Limited[3]	4,842,668	6,295,468
Novo Holdings A/S[4]	11,538,461	14,999,999
Omega Fund V, L.P.[5]	11,538,461	14,999,999
Pfizer Inc.[6]	4,230,769	5,500,000
Entities related to Polaris[7]	2,150,360	2,795,468
Timothy A. Springer, Ph.D.[8]	7,846,153	10,199,999

(1) Artal International SCA holds more than 5% of our outstanding capital stock.

(2) Consists of 1,413,251 shares of Series B Preferred Stock held by EcoR1 Capital Fund, L.P. and 6,279,056 shares of Series B Preferred Stock held by EcoR1 Capital Fund Qualified, L.P. Together, they hold more than 5% of our outstanding capital stock.

(3) Vikas Goyal, a member of our board of directors, is a Principal at S.R. One, Limited.

(4) Nilesh Kumar, Ph.D., a member of our board of directors, is a partner at Novo Ventures (US), Inc., which is a wholly-owned subsidiary of Novo Holdings A/S.

(5) Otello Stampacchia, Ph.D., a member of our board of directors, is a Managing Director of Omega Funds.

(6) Barbara J. Dalton, Ph.D., a member of our board of directors, is the Vice President, WWBD and Senior Managing Partner of Pfizer Ventures, the venture capital arm of Pfizer Inc.

(7) Consists of 2,009,763 shares of Series B Preferred Stock held by Polaris Partners VII, L.P. and 140,597 shares of Series B Preferred Stock held by Polaris Entrepreneurs' Fund VII, L.P. Amir Nashat, a member of our board of directors, is a managing partner at Polaris Partners.

(8) Timothy A. Springer, Ph.D. is a member of our board of directors and holds more than 5% of our outstanding capital stock.

Series A Convertible Preferred Stock Financing

In three closings in June 2016, September 2017 and August 2018, we sold an aggregate of 49,047,619 shares of our Series A convertible preferred stock at a purchase price of $1.05 per share for an aggregate purchase price of approximately $51.5 million. Each share of our Series A convertible preferred stock will convert automatically into one share of our common stock upon the completion of this offering.

The purchasers of our Series A convertible preferred stock are entitled to specified registration rights. For additional information, see "Description of Capital Stock — Registration Rights." The following table summarizes the Series A convertible preferred stock purchased by members of our board of directors or their affiliates and holders of more than 5% of our outstanding capital stock. The terms of these purchases were the same for all purchasers of our Series A convertible preferred stock. Please refer to the section titled "Principal Stockholders" for more details regarding the shares held by these entities.

Name of Stockholder	Shares of Series A Convertible Preferred Stock	Total Purchase Price ($)
Gustav Christensen(1)	190,475	199,999
S.R. One, Limited(2)	8,571,428	8,999,999
Omega Fund V, L.P.(3)	5,000,000	5,250,000
Pfizer Ventures (US) LLC(4)	8,571,428	8,999,999
Entities related to Polaris(5)	7,713,328	8,098,994
Schrödinger, Inc.(6)	1,428,572	1,500,001
Timothy A. Springer, Ph.D.(7)	13,333,333	14,000,000

(1) Gustav Christensen is a member of our board of directors.

(2) Vikas Goyal, a member of our board of directors, is a Principal at S.R. One, Limited.

(3) Otello Stampacchia, Ph.D., a member of our board of directors, is a Managing Director of Omega Funds.

(4) Barbara J. Dalton, Ph.D., a member of our board of directors, is the Vice President, WWBD and Senior Managing Partner of Pfizer Ventures, the venture capital arm of Pfizer Inc.

(5) Consists of 7,209,008 shares of Series A Preferred Stock held by Polaris Partners VII, L.P. and 504,320 shares of Series A Preferred Stock held by Polaris Entrepreneurs' Fund VII, L.P. Amir Nashat, a member of our board of directors, is a managing partner at Polaris Partners.

(6) Ramy Farid, Ph.D., a member of our board of directors, serves as President and Chief Executive Officer of Schrödinger, Inc. and is a member of the Schrödinger, Inc. board of directors.

(7) Timothy A. Springer, Ph.D. is a member of our board of directors and holds more than 5% of our outstanding capital stock.

Series Seed Convertible Preferred Stock Financing

In January 2016, we sold an aggregate of 3,984,815 shares of our Series Seed convertible preferred stock at a purchase price of $0.75286 per share for an aggregate purchase price of approximately $3.0 million. Each share of our Series Seed convertible preferred stock will convert automatically into one share of our common stock upon the completion of this offering.

The purchasers of our Series Seed convertible preferred stock are entitled to specified registration rights. For additional information, see "Description of Capital Stock — Registration Rights." The following table summarizes the Series Seed convertible preferred stock purchased by members of our board of directors or their affiliates and holders of more than 5% of our outstanding capital stock. The terms of these purchases were the same for all purchasers of our Series Seed convertible preferred stock. Please refer to the section titled "Principal Stockholders" for more details regarding the shares held by these entities.

Name of Stockholder	Shares of Series Seed Convertible Preferred Stock	Total Purchase Price ($)
Gustav Christensen[1]	265,654	200,000
Entities related to Polaris[2]	960,376	723,027
Schrödinger, Inc.[3]	478,178	360,000
Timothy A. Springer, Ph.D.[4]	1,940,623	1,461,012
Praveen P. Tipirneni, M.D.[5]	132,827	100,000

(1) Gustav Christensen is a member of our board of directors.

(2) Consists of 897,584 shares of Series Seed Preferred Stock held by Polaris Partners VII, L.P. and 62,792 shares of Series Seed Preferred Stock held by Polaris Entrepreneurs' Fund VII, L.P. Amir Nashat, a member of our board of directors, is a managing partner at Polaris Partners.

(3) Ramy Farid, Ph.D., a member of our board of directors, serves as President and Chief Executive Officer of Schrödinger, Inc. and is a member of the Schrödinger, Inc. board of directors.

(4) Timothy A. Springer, Ph.D. is a member of our board of directors and holds more than 5% of our outstanding capital stock.

(5) Praveen P. Tipirneni, M.D. is our President and Chief Executive Officer and a member of our board of directors.

Transactions with Schrödinger, Inc. and Schrödinger, LLC

In June 2015, we entered into a collaboration agreement with Schrödinger, LLC, which we subsequently amended in March 2018 to explore drug targets selected by us. Under the collaboration Schrödinger will use its technology platform to perform virtual screens of members of the target class of human integrins, and we and Schrödinger will collaborate to facilitate prioritization of targets, perform target validation and analysis, identify leads and perform lead optimization. Schrödinger, LLC is a wholly-owned subsidiary of Schrödinger, Inc., of which Dr. Ramy Farid, one of our directors, serves as President and Chief Executive Officer and as a member of the Schrödinger, Inc. board of directors. Dr. Farid also holds approximately 1.67% of the outstanding shares of Schrödinger, Inc. Pursuant to the collaboration agreement, we have made two milestone payments to Schrödinger, LLC of $100,000 each in July 2017.

Additionally, Schrödinger, Inc. purchased shares of our Series Seed convertible preferred stock and shares of our Series A convertible preferred stock. For additional information, please see "— Series Seed Convertible Preferred Stock Financing" and "— Series A Convertible Preferred Stock Financing."

Transactions with Timothy A. Springer, Ph.D.

In June 2015, we entered into a consulting agreement, or the Springer Agreement, with Timothy A. Springer, Ph.D., a director on our Board and a beneficial owner of approximately 22% of our stock as of March 31, 2019, to provide advisory services related to our research and development programs, intellectual property development, strategic planning, our Scientific Advisory Board and other related services. Pursuant to the Springer Agreement, we pay an annual consulting fee of $80,000.

In April 2019, we granted to Dr. Springer a stock option to purchase 25,000 shares of our common stock, with an exercise price of $1.33 per share, in connection with his services as a member of our Scientific Advisory Board.

Investors' Rights Agreement

We have entered into an investors' rights agreement, dated December 5, 2018, with certain holders of our convertible preferred stock, including Artal International SCA, entities related to EcoR1, Gustav Christensen, Novo Holdings A/S , Omega Fund V., L.P., S.R. One, Limited, Pfizer Inc., entities related to Polaris, Praveen P. Tipirneni, M.D., Schrödinger, Inc. and Timothy A. Springer, Ph.D. These stockholders are entitled to rights with respect to the registration of their shares following this offering under the Securities Act of 1933, as amended. For a description of these registration rights, see the section entitled "Description of Capital Stock — Registration Rights."

Equity Grants to Executive Officers and Directors

We have granted stock options to our executive officers and certain directors, as more fully described in the sections entitled "Executive Compensation" and "Management — Non-Employee Director Compensation," respectively.

Director and Executive Officer Compensation

Please see the sections entitled "Management — Non-Employee Director Compensation" and "Executive Compensation" for information regarding the compensation of our directors and executive officers.

Employment Agreements

We intend to enter into amended and restated employment offer letters with our executive officers. For more information regarding these agreements, see the section entitled "Executive Compensation — Employee Offer Letters."

Indemnification Agreements

In connection with this offering, we intend to enter into new indemnification agreements with each of our directors and executive officers. The indemnification agreements, our restated certificate of incorporation and our restated bylaws will require us to indemnify our directors to the fullest extent not prohibited by Delaware law. Subject to certain limitations, our restated bylaws also require us to advance expenses incurred by our directors and officers. For more information regarding these agreements, see the section entitled "Executive Compensation — Limitations on Liability and Indemnification Matters" for information on our indemnification arrangements with our directors and executive officers.

Policies and Procedures for Related Party Transactions

In connection with this offering, we intend to adopt a written related person transactions policy that provides that our executive officers, directors, nominees for election as a director, beneficial owners of more than 5% of our common stock, and any members of the immediate family of and any entity affiliated with

any of the foregoing persons, are not permitted to enter into a material related person transaction with us without the review and approval of our audit committee, or a committee composed solely of independent directors in the event it is inappropriate for our audit committee to review such transaction due to a conflict of interest. We expect the policy to provide that any request for us to enter into a transaction with an executive officer, director, nominee for election as a director, beneficial owner of more than 5% of our common stock or with any of their immediate family members or affiliates in which the amount involved exceeds $120,000 will be presented to our audit committee (or the committee composed solely of independent directors, if applicable) for review, consideration and approval. In approving or rejecting any such proposal, we expect that our audit committee (or the committee composed solely of independent directors, if applicable) will consider the relevant facts and circumstances available and deemed relevant to the audit committee (or the committee composed solely of independent directors, if applicable), including, but not limited to, whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related person's interest in the transaction.

PRINCIPAL STOCKHOLDERS

The following table and accompanying footnotes set forth certain information with respect to the beneficial ownership of our common stock at March 31, 2019, and as adjusted to reflect the shares of common stock to be issued and sold in this offering, for:

- each of our directors;
- each of our named executive officers;
- all of our current directors and executive officers as a group; and
- each person, or group of affiliated persons, who beneficially owned more than 5% of our outstanding shares of common stock.

We have determined beneficial ownership in accordance with the rules of the Securities and Exchange Commission, and the information is not necessarily indicative of beneficial ownership for any other purpose. Except as indicated by the footnotes below, we believe, based on information furnished to us, that the persons and entities named in the table below have sole voting and sole investment power with respect to all shares of common stock that they beneficially owned, subject to applicable community property laws.

Beneficial ownership prior to this offering is based on 137,593,380 shares of common stock outstanding as of March 31, 2019, assuming the automatic conversion of all outstanding shares of our convertible preferred stock into common stock in connection with this offering. Beneficial ownership after this offering is based on shares of common stock outstanding, assuming (i) the automatic conversion of all outstanding shares of our convertible preferred stock into common stock as described above and (ii) the issuance of shares of common stock in this offering.

In computing the number of shares of common stock beneficially owned by a person and the percentage ownership of that person, we deemed to be outstanding all shares of common stock subject to options held by that person or entity that are currently exercisable or that will become exercisable within 60 days of March 31, 2019. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Morphic Therapeutic, Inc., 35 Gatehouse Drive, A2, Waltham, Massachusetts 02451.

Name of Beneficial Owner	Beneficial Ownership Prior to this Offering		Beneficial Ownership After this Offering	
	Number	Percent	Number	Percent
Directors and Named Executive Officers:				
Praveen P. Tipirneni, M.D.(1)	4,226,165	3.1%		%
Bruce N. Rogers, Ph.D.(2)	1,275,908	*		
Alexey A. Lugovskoy, Ph.D.(3)	851,579	*		
Gustav Christensen(4)	586,129	*		
Barbara J. Dalton, Ph.D.(5)	—	—		
Ramy Farid, Ph.D(6)	4,868,800	3.5		
Vikas Goyal(7)	—	—		
Nilesh Kumar, Ph.D.(8)	—	—		
Amir Nashat(9)	12,816,474	9.3		
Timothy A. Springer, Ph.D.(10)	30,112,519	21.9		
Otello Stampacchia, Ph.D.(11)	16,538,461	12.0		
All executive officers and directors as a group (13 persons)(12)	71,914,087	52.1		
5% Stockholders:				
Artal International S.C.A.(13)	7,692,307	5.6		
EcoR 1 Capital Fund Entities(14)	7,692,307	5.6		
Novo Holdings A/S(8)	11,538,461	8.4		
Omega Fund V, L.P.(11)	16,538,461	12.0		
Pfizer Entities(5)	12,802,197	9.3		
Polaris Entities(10)	12,816,474	9.3		
Springer Entities(0)	30,112,519	21.9		
S.R. One, Limited(7)	13,414,096	9.8		

* Represents beneficial ownership of less than one percent.

(1) Represents (i) 3,944,603 shares of common stock, of which 977,831 shares are subject to a right of repurchase as of March 31, 2019, and (ii) 281,562 shares underlying options to purchase common stock that are exercisable within 60 days of March 31, 2019.

(2) Represents (i) 1,141,846 shares of common stock, of which 530,406 shares are subject to a right of repurchase as of March 31, 2019, and (ii) 134,062 shares underlying options to purchase common stock that are exercisable within 60 days of March 31, 2019.

(3) Represents (i) 762,413 shares of common stock, of which 357,066 shares are subject to a right of repurchase as of March 31, 2019, and (ii) 89,166 shares underlying options to purchase common stock that are exercisable within 60 days of March 31, 2019.

(4) Represents 586,129 shares of common stock, 27,084 of which are subject to our right of repurchase as of March 31, 2019.

(5) Represents (i) 4,230,769 shares of common stock held by Pfizer Inc., or Pfizer, and (ii) 8,571,428 shares held by Pfizer Ventures (US) Holdings, or Pfizer Ventures, a wholly-owned subsidiary of Pfizer. Barbara J. Dalton, a member of our board of directors, is employed by Pfizer Inc. Dr. Dalton has no voting or dispositive power over the shares held by Pfizer or Pfizer Ventures and disclaims beneficial ownership of all such shares. The address of Pfizer is 235 East 42nd Street, New York, New York 10017.

(6) Represents 4,868,800 shares of common stock held by Schrödinger, Inc., or Schrödinger. Ramy Farid, a member of our board of directors, is the President of Schrödinger and may be deemed to have sole voting and dispositive power over the

shares held by Schrödinger. Dr. Farid disclaims beneficial ownership of the shares held by Schrödinger. The address of Schrödinger is Frimley Road, Quatro House, Camberley GU16 7ER, United Kingdom.

(7) Represents 13,414,096 shares of common stock held by S.R. One, Limited, or S.R. One, a wholly-owned subsidiary of GlaxoSmithKline LLC, or GSK LLC. GSK LLC is an indirect wholly owned subsidiary of GlaxoSmithKline plc, or GSK plc. Vikas Goyal, a member of our board of directors, is a principal at S.R. One and an employee of GSK LLC. Mr. Goyal has no voting or dispositive power over the shares held by S.R. One and disclaims beneficial ownership of all such shares. The address of S.R. One Limited is 161 Washington Street, Suite 500, Conshohocken, Pennsylvania 19428.

(8) Represents 11,538,461 shares of common stock held by Novo Holdings A/S, or Novo. Nilesh Kumar, a member of our board of directors, is a partner of Novo Ventures (US) Inc., which is a wholly-owned subsidiary of Novo. Dr. Kumar has no voting or dispositive power over the shares held by Novo and disclaims beneficial ownership of all such shares. Viviane Monges, Jeppe Christiansen, Steen Riisgaard, Lars Rebien Sorensen, Jean-Luc Butel and Francis Cuss, the members of Novo's board of directors, may be deemed to share voting and dispositive power over the shares held by Novo. Each of such individuals disclaims beneficial ownership of all shares held by Novo. The address of Novo Holdings A/S is Tuborg Havnevej 19, 2900 Hellerup, Denmark.

(9) Represents (i) 11,978,495 shares of common stock held by Polaris Partners VII, L.P., or PP VII, and (ii) 837,979 shares of common stock held by Polaris Partners Entrepreneurs Fund VII, L.P., or PEF VII. Polaris Management Company VII, L.L.C., or PP GP VII, is the general partner of each of PP VII and PEF VII. PP GP VII may be deemed to have sole voting and investment power with respect to the shares owned by each of PP VII and PEF VII and disclaims beneficial ownership of these securities, except to the extent of its pecuniary interest therein. Amir Nashat, a member of our board of directors, Brian Chee, David Barrett, Bryce Youngren, Jonathan Flint and Terrance McGuire are the managing members of PP GP VII. Each of these managing members may be deemed to share voting and dispositive power over the shares held by each of PP VII and PEF VI. Each of these managing members disclaims beneficial ownership of such shares, except to the extent of their pecuniary interests therein. The address of Polaris Partners is One Marina Park Drive, 10th Floor, Boston, Massachusetts 02210.

(10) Represents (i) 26,620,109 shares of common stock held directly, (ii) 250,000 shares of common stock held by Dr. Springer's spouse, (iii) 1,250,000 shares of common stock held by Springer-Lu Family 2004 Irrevocable Trust dated March 29, 2004, Fiduciary Trust Company of New England LLC, Trustee, over which shares Dr. Springer has no voting or dispositive control, and (iv) 1,992,410 shares of common stock held by TAS Partners LLC, of which Dr. Springer is manager and has sole voting and dispositive control.

(11) Represents 16,538,461 shares of common stock held by Omega Fund V, L.P., or Omega L.P. Otello Stampacchia, a member of our board of directors, Richard Lim, Claudio Nessi and Anne-Mari Paster are the directors of Omega Fund V GP Manager, Ltd., or Omega Manager, which is the sole general partner of Omega Fund GP, L.P., or Omega GP, which is the sole general partner of Omega L.P. Messrs. Stampacchia, Lim and Nessi and Ms. Paster may be deemed to share voting and dispositive power over the shares held by Omega L.P. Each of such individuals, together with Omega GP and Omega Manager, disclaims beneficial ownership of the shares held by Omega L.P. except to the extent of their pecuniary interest therein. The address of Omega Fund V, L.P. is 185 Dartmouth Street, Suite 502, Boston, Massachusetts 02116.

(12) Represents (i) 71,342,318 shares of issued and outstanding common stock, of which 2,137,450 shares are subject to a right of repurchase as of March 31, 2019, and (ii) 571,769 shares underlying options to purchase common stock that are exercisable within 60 days of March 31, 2019.

(13) Represents 7,692,307 shares of common stock held by Artal International S.C.A., or Artal S.C.A. Artal International Management SA, or Artal Management, is the managing partner of Artal SCA. Stichting Administratiekantoor Westend, or Stichting, controls Westend SA, which controls Artal Group SA, which controls Artal Management. Pascal Minne, the sole Director of Stichting, may be deemed to have sole voting and dispositive power over the shares held by Artal S.C.A. Mr. Minne disclaims beneficial ownership of the shares held by Artal S.C.A. except to the extent of his pecuniary interest therein. The address of Artal International S.C.A. is 44, rue de la Vallee, L-2661, Luxembourg.

(14) Represents (i) 1,413,251 shares of common stock held by EcoR1 Capital Fund, L.P., or EcoR1 Capital, and (ii) 6,279,056 shares of common stock held by EcoR1 Capital Fund Qualified, L.P., or EcoR1 Qualified. EcoR1 Capital, LLC, or EcoR1 LLC, is the general partner of each of EcoR1 Capital and EcoR1 Qualified and may be deemed to indirectly beneficially own the shares held by each of EcoR1 Capital and EcoR1 Qualified. Oleg Nodelman is the managing member of EcoR1 and may be deemed to have sole voting and dispositive power over the shares held by EcoR1 Capital and EcoR1 Qualified. Mr. Nodelman disclaims beneficial ownership of the shares held by EcoR1 Capital and EcoR1 Qualified except to the extent of his pecuniary interest therein. The address of EcoR1 Capital and EcoR1 Qualified is 409 Illinois Street, San Francisco, California 94158.

DESCRIPTION OF CAPITAL STOCK

The following description summarizes the most important terms of our capital stock, as they will be in effect following this offering. Because it is only a summary, it does not contain all the information that may be important to you. We expect to adopt a restated certificate of incorporation and restated bylaws that will become effective upon the completion of this offering, and this description summarizes provisions that are expected to be included in these documents. For a complete description, you should refer to our restated certificate of incorporation and restated bylaws, which are included as exhibits to the registration statement of which this prospectus forms a part, and to the applicable provisions of Delaware law.

General

Upon the completion of this offering, our authorized capital stock will consist of shares of common stock, $0.0001 par value per share, and shares of undesignated preferred stock, $0.0001 par value per share.

Pursuant to the provisions of our current certificate of incorporation all of the outstanding convertible preferred stock will automatically convert into common stock in connection with the completion of this offering. Our Series Seed convertible preferred stock will convert at a ratio of 1:1, our Series A convertible preferred stock will convert at a ratio of 1:1 and our Series B convertible preferred stock will convert at a ratio of 1:1. Assuming the effectiveness of this conversion as of December 31, 2018, there were 137,593,380 shares of our common stock issued, held by approximately 75 stockholders of record, and no shares of our convertible preferred stock outstanding. Our board of directors is authorized, without stockholder approval, to issue additional shares of our capital stock.

Common Stock

Dividend Rights

Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of our common stock are entitled to receive dividends out of funds legally available if our board of directors, in its discretion, determines to issue dividends and then only at the times and in the amounts that our board of directors may determine. See the section entitled "Dividend Policy."

Voting Rights

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders. We have not provided for cumulative voting for the election of directors in our restated certificate of incorporation, which means that holders of a majority of the shares of our common stock will be able to elect all of our directors. Our restated certificate of incorporation will establish a classified board of directors, to be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms.

No Preemptive or Similar Rights

Our common stock is not entitled to preemptive rights, and is not subject to conversion, redemption or sinking fund provisions.

Right to Receive Liquidation Distributions

Upon our liquidation, dissolution or winding-up, the assets legally available for distribution to our stockholders would be distributable ratably among the holders of our common stock and any participating preferred stock outstanding at that time, subject to prior satisfaction of all outstanding debt and liabilities and the preferential rights of and the payment of liquidation preferences, if any, on any outstanding shares of preferred stock.

Preferred Stock

Immediately prior to the completion of this offering, each outstanding share of preferred stock will be converted into one share of common stock.

Following the completion of this offering, our board of directors will be authorized, subject to limitations prescribed by Delaware law, to issue preferred stock in one or more series, to establish from time to time the number of shares to be included in each series and to fix the designation, powers, preferences and rights of the shares of each series and any of their qualifications, limitations or restrictions, in each case without further vote or action by our stockholders. Our board of directors will also be able to increase or decrease the number of shares of any series of preferred stock, but not below the number of shares of that series then outstanding, without any further vote or action by our stockholders. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of our company and might adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. We have no current plan to issue any shares of preferred stock.

Warrants

As of March 31, 2019, we had outstanding the following warrant to purchase shares of our capital stock:

Type of Capital Stock Underlying Warrant	Total Number of Shares Subject to Warrant	Exercise Price Per Share($)	Issuance Date
Series Seed[(1)]	39,800	0.75268	3/31/2016

(1) The exercise price of this warrant may be paid either in cash or by surrendering the right to receive shares having a value equal to the exercise price. This warrant will convert into a warrant to receive 39,800 shares of our common stock upon the completion of this offering and will expire on March 30, 2026.

Stock Options

As of March 31, 2019, we had outstanding options to purchase an aggregate 10,417,696 shares of our common stock, with an exercise price of $0.74.

Registration Rights

Pursuant to the terms of our amended and restated investors' rights agreement, immediately following this offering, the holders of shares of our common stock will be entitled to rights with respect to the registration of these shares under the Securities Act of 1933, as amended, or the Securities Act, as described below. We refer to these shares collectively as registrable securities.

Demand Registration Rights

Beginning 180 days after the completion of this offering, if the holders of not less than 40% of the then-outstanding registrable securities may request the registration under the Securities Act of any registrable securities, if the anticipated aggregate offering price, net of selling expenses, would exceed $10.0 million, we are obligated to provide notice of such request to all holders of registration rights and, as soon as practicable and in any event within 60 days, file a Form S-1 registration statement under the Securities Act covering all registrable securities that the initiating holders requested to be registered and any additional registrable securities requested to be included in such registration by any other holders. We are only required to file two registration statements that are declared effective upon exercise of these

demand registration rights. We may postpone taking action with respect to such filing not more than twice during any 12-month period for a period of not more than 120 days, if after receiving a request for registration, we furnish to the holders requesting such registration a certificate signed by our Chief Executive Officer stating that, in the good faith judgment of our board of directors, it would be materially detrimental to us and our stockholders.

Form S-3 Registration Rights

The holders of at least 10% of the then-outstanding registrable securities can request that we register all or part of their shares on Form S-3 if we are eligible to file a registration statement on Form S-3 and if the aggregate price to the public of the shares offered, net of selling expenses, is at least $3.0 million. The stockholders may only require us to effect two registration statements on Form S-3 in a 12-month period. We may postpone taking action with respect to such filing twice during any 12-month period for a period of not more than 120 days if our board of directors determines in its good faith judgment that the filing would be materially detrimental to us and our stockholders.

Piggyback Registration Rights

If we register any of our securities for public sale, holders of then-outstanding registrable securities or their permitted transferees will have the right to include their registrable securities in the registration statement. However, this right does not apply to a registration relating to any of our employee benefit plans, a corporate reorganization or transaction under Rule 145 of the Securities Act, a registration that requires information that is not substantially the same, or a registration in which the only common stock being registered is common stock issuable upon conversion of debt securities that are also being registered. In an underwritten offering, if the total number of securities requested by stockholders to be included in the offering exceeds the number of securities to be sold (other than by the us) that the underwriters determine in their reasonable discretion is compatible with the success of the offering, then we will be required to include only that number of securities that the underwriters and us, in our sole discretion, determine will not jeopardize the success of the offering. If the underwriters determine that less than all the securities requested to be registered cab be included in the offering, the number of shares to be registered will be apportioned pro rata among the selling holders, according to the total number of registrable securities owned by each holder, or in a manner mutually agreed upon by all such selling holders. However, the number of shares to be registered by these holders cannot be reduced unless all other securities (other than the securities to be sold by us) are excluded entirely and may not be reduced below 30% of the total number of securities included in such offering, except for in connection with an initial public offering, in which case the underwriters may exclude these holders entirely.

Expenses of Registration Rights

We generally will pay all expenses, other than underwriting discounts, selling commissions and stock transfer taxes incurred in connection with each of the registrations described above, including the fees and disbursements, not to exceed $75,000, of one counsel for the selling holders.

Expiration of Registration Rights

The registration rights described above will expire, with respect to any particular holder of these rights, on the earliest to occur of (a) the closing of a deemed liquidation event, as defined in our restated certificate of incorporation, (b) at such time that all of the holder's registrable securities can be sold without limitation in any three-month period without registration in compliance with Rule 144 or a similar exemption under the Securities Act and (c) seven years following the completion of this offering.

Anti-Takeover Provisions

The provisions of Delaware General Corporation Law, or DGCL, our restated certificate of incorporation and our restated bylaws, as we expect they will be in effect upon the completion of this offering, could have the effect of delaying, deferring or discouraging another person from acquiring control of our company. These provisions, which are summarized below, may have the effect of discouraging takeover bids. They are also designed, in part, to encourage persons seeking to acquire control of us to negotiate first with our board of

directors. We believe that the benefits of increased protection of our potential ability to negotiate with an unfriendly or unsolicited acquirer outweigh the disadvantages of discouraging a proposal to acquire us because negotiation of these proposals could result in an improvement of their terms.

Delaware Law

We are subject to the provisions of Section 203 of the DGCL regulating corporate takeovers. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years following the date on which the person became an interested stockholder unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, but not the outstanding voting stock owned by the interested stockholder, (i) shares owned by persons who are directors and also officers and (ii) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to the date of the transaction, the business combination is approved by the board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66.67% of the outstanding voting stock that is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction or series of transactions together resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting stock. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. We also anticipate that Section 203 may also discourage attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

Restated Certificate of Incorporation and Restated Bylaw Provisions

Our restated certificate of incorporation and our restated bylaws, as we expect they will be in effect upon the completion of this offering, include a number of provisions that could deter hostile takeovers or delay or prevent changes in control of our company, including the following:

- *Board of Directors Vacancies.* Our restated certificate of incorporation and restated bylaws will authorize only our board of directors to fill vacant directorships, including newly created seats. In addition, the number of directors constituting our board of directors is permitted to be set only by a resolution adopted by a majority vote of our entire board of directors. These provisions would prevent a stockholder from increasing the size of our board of directors and then gaining control of our board of directors by filling the resulting vacancies with its own nominees. This makes it more difficult to change the composition of our board of directors but promotes continuity of management.
- *Classified Board.* Our restated certificate of incorporation and restated bylaws will provide that our board of directors is classified into three classes of directors, each with staggered three-year terms. A third party may be discouraged from making a tender offer or otherwise attempting to obtain control of us as it is more difficult and time consuming for stockholders to replace a majority of the directors on a classified board of directors. See the section entitled "Management — Board Composition."

- *Stockholder Action; Special Meetings of Stockholders.* Our restated certificate of incorporation will provide that our stockholders may not take action by written consent, but may only take action at annual or special meetings of our stockholders. As a result, a holder controlling a majority of our capital stock would not be able to amend our restated bylaws or remove directors without holding a meeting of our stockholders called in accordance with our restated bylaws. Further, our restated bylaws will provide that special meetings of our stockholders may be called only by a majority of our board of directors, the chairman of our board of directors, our Chief Executive Officer or our President, thus prohibiting a stockholder from calling a special meeting. These provisions might delay the ability of our stockholders to force consideration of a proposal or for stockholders controlling a majority of our capital stock to take any action, including the removal of directors.

- *Advance Notice Requirements for Stockholder Proposals and Director Nominations.* Our restated bylaws will provide advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders or to nominate candidates for election as directors at our annual meeting of stockholders. Our restated bylaws also will specify certain requirements regarding the form and content of a stockholder's notice. These provisions might preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders if the proper procedures are not followed. We expect that these provisions might also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

- *No Cumulative Voting.* The DGCL provides that stockholders are not entitled to the right to cumulate votes in the election of directors unless a corporation's certificate of incorporation provides otherwise. Our restated certificate of incorporation and restated bylaws will not provide for cumulative voting.

- *Directors Removed Only for Cause.* Our restated certificate of incorporation will provide that stockholders may remove directors only for cause and only by the affirmative vote of the holders of at least two-thirds of our outstanding common stock.

- *Amendment of Charter Provisions.* Any amendment of the above expected provisions in our restated certificate of incorporation would require approval by holders of at least two-thirds of our outstanding common stock.

- *Issuance of Undesignated Preferred Stock.* Our board of directors has the authority, without further action by the stockholders, to issue up to shares of undesignated preferred stock with rights and preferences, including voting rights, designated from time to time by our board of directors. The existence of authorized but unissued shares of preferred stock would enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by merger, tender offer, proxy contest or other means.

- *Choice of Forum.* Our restated certificate of incorporation will provide that, to the fullest extent permitted by law, the Court of Chancery of the State of Delaware will be the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the DGCL, our restated certificate of incorporation or our restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable. This exclusive forum provision does not apply to suits brought to enforce a duty or liability created by the Exchange Act. It could apply, however, to a suit that falls within one or more of the categories enumerated in the exclusive forum provision and asserts claims under the Securities Act, inasmuch as Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder. There is uncertainty as to whether a court would enforce such provision with respect to claims under

the Securities Act, and our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

Transfer Agent and Registrar

Upon the completion of this offering, the transfer agent and registrar for our common stock will be Computershare Trust Company, N.A. The transfer agent's address is 250 Royall Street, Canton, Massachusetts 02021, and its telephone number is (800) 962-4284.

The Nasdaq Global Market Listing

We intend to apply to have our common stock approved for listing on The Nasdaq Global Market under the symbol "MORF."

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our common stock, and we cannot predict the effect, if any, that market sales of shares of our common stock or the availability of shares of our common stock for sale will have on the market price of our common stock prevailing from time to time. Nevertheless, sales of substantial amounts of our common stock, including shares issued upon exercise of outstanding options and warrants, in the public market following this offering could adversely affect market prices prevailing from time to time and could impair our ability to raise capital through the sale of our equity securities.

Upon the completion of this offering, we will have a total of shares of our common stock outstanding, assuming (i) the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of shares of our common stock and (ii) the issuance of shares of common stock in this offering. Of these outstanding shares, all of the shares of common stock sold in this offering will be freely tradable, except that any shares purchased in this offering by our affiliates, as that term is defined in Rule 144 under the Securities Act of 1933, as amended, or the Securities Act, can only be sold in compliance with the Rule 144 limitations described below or in compliance with the lock-up agreements.

The remaining outstanding shares of our common stock will be deemed "restricted securities" as defined in Rule 144. Restricted securities may be sold in the public market only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rule 144 or Rule 701 promulgated under the Securities Act, which rules are summarized below. In addition, substantially all of our security holders have, or will have, entered into market standoff agreements with us or lock-up agreements with the underwriters under which they have agreed, subject to specific exceptions, not to sell any of our stock for at least 180 days following the date of this prospectus, as described below. As a result of these agreements and the provisions of our amended and restated investors' rights agreement described above under the section entitled "Description of Capital Stock — Registration Rights," subject to the provisions of Rule 144 or Rule 701, shares will be available for sale in the public market as follows:

- beginning on the date of this prospectus, all of the shares sold in this offering will be immediately available for sale in the public market; and
- beginning 181 days after the date of this prospectus, additional shares will become eligible for sale in the public market, of which shares will be held by affiliates and subject to the volume and other restrictions of Rule 144, as described below.

Lock-Up/Market Standoff Agreements

All of our directors and officers and substantially all of our security holders are, or will be, subject to lock-up agreements or market standoff provisions that prohibit them from offering for sale, selling, contracting to sell, granting any option for the sale of, transferring or otherwise disposing of any shares of our common stock, options or warrants to acquire shares of our common stock or any security or instrument related to our common stock, or entering into any swap, hedge or other arrangement that transfers any of the economic consequences of ownership of our common stock, for a period of 180 days following the date of this prospectus without the prior written consent of Jefferies LLC and Cowen and Company, LLC, subject to certain exceptions. Jefferies LLC and Cowen and Company, LLC may, in their sole discretion and at any time or from time to time before the termination of the 180-day period release all or any portion of the securities subject to lock-up agreements. See the section entitled "Underwriting."

Rule 144

In general, under Rule 144 as currently in effect, once we have been subject to public company reporting requirements for at least 90 days, a person who is not deemed to have been one of our affiliates for

purposes of the Securities Act at any time during the three months preceding a sale and who has beneficially owned the shares proposed to be sold for at least six months, including the holding period of any prior owner other than our affiliates, is entitled to sell those shares without complying with the manner of sale, volume limitation or notice provisions of Rule 144, subject to compliance with the public information requirements of Rule 144. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than our affiliates, then that person would be entitled to sell those shares without complying with any of the requirements of Rule 144.

In general, under Rule 144, as currently in effect, our affiliates or persons selling shares on behalf of our affiliates are entitled to sell upon expiration of the lock-up and market standoff agreements described above, within any three-month period, a number of shares that does not exceed the greater of:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately shares immediately after this offering; or
- the average reported weekly trading volume of our common stock during the four calendar weeks preceding the filing of a notice on Form 144 with respect to that sale.

Sales under Rule 144 by our affiliates or persons selling shares on behalf of our affiliates are also subject to certain manner of sale provisions and notice requirements and to the availability of current public information about us.

Rule 701

Rule 701 generally allows a stockholder who purchased shares of our common stock pursuant to a written compensatory plan or contract and who is not deemed to have been an affiliate of our company during the immediately preceding three months to sell these shares in reliance upon Rule 144, but without being required to comply with the public information, holding period, volume limitation or notice provisions of Rule 144. Rule 701 also permits affiliates of our company to sell their Rule 701 shares under Rule 144 without complying with the holding period requirements of Rule 144. All holders of Rule 701 shares, however, are required by that rule to wait until 90 days after the date of this prospectus before selling those shares pursuant to Rule 701 and are subject to the lock-up and market standoff agreements described above.

Form S-8 Registration Statement

In connection with this offering, we intend to file a registration statement on Form S-8 under the Securities Act covering all of the shares of our common stock subject to outstanding options and the shares of our common stock reserved for issuance under our stock plans. We expect to file this registration statement as soon as permitted under the Securities Act. However, the shares registered on Form S-8 may be subject to the volume limitations and the manner of sale, notice and public information requirements of Rule 144 and will not be eligible for resale until expiration of the lock-up and market standoff agreements to which they are subject.

Registration Rights

We have granted demand, piggyback and Form S-3 registration rights to certain of our stockholders to sell our common stock. Registration of the sale of these shares under the Securities Act would result in these shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of the registration, except for shares purchased by affiliates. For a further description of these rights, see the section entitled "Description of Capital Stock — Registration Rights."

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following summary describes the material U.S. federal income tax consequences of the acquisition, ownership and disposition of our common stock acquired in this offering by Non-U.S. Holders (as defined below). This discussion does not address all aspects of U.S. federal income taxes, does not discuss the potential application of the alternative minimum tax or Medicare Contribution tax on net investment income and does not deal with state or local taxes, U.S. federal gift and estate tax laws, except to the limited extent provided below, or any non-U.S. tax consequences that may be relevant to Non-U.S. Holders in light of their particular circumstances.

Special rules different from those described below may apply to certain Non-U.S. Holders that are subject to special treatment under the Internal Revenue Code of 1986, as amended, or the Code, such as:

- insurance companies, banks and other financial institutions;
- tax-exempt organizations (including private foundations) and tax-qualified retirement plans;
- foreign governments and international organizations;
- broker-dealers and traders in securities;
- U.S. expatriates and certain former citizens or long-term residents of the United States;
- persons required for U.S. federal income tax purposes to conform the timing of income accruals to their financial statements under Section 451(b) of the Code;
- persons that own, or are deemed to own, more than 5% of our capital stock;
- "controlled foreign corporations," "passive foreign investment companies" and corporations that accumulate earnings to avoid U.S. federal income tax;
- persons that hold our common stock as part of a "straddle," "hedge," "conversion transaction," "synthetic security" or integrated investment or other risk reduction strategy;
- persons who do not hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, for investment purposes); and
- partnerships and other pass-through entities, and investors in such pass-through entities (regardless of their places of organization or formation).

Such Non-U.S. Holders are urged to consult their own tax advisors to determine the U.S. federal, state, local and other tax consequences that may be relevant to them.

Furthermore, the discussion below is based upon the provisions of the Code, and U.S. Treasury Regulations, rulings and judicial decisions thereunder as of the date hereof, and such authorities may be repealed, revoked or modified, possibly retroactively, and are subject to differing interpretations which could result in U.S. federal income tax consequences different from those discussed below. We have not requested a ruling from the Internal Revenue Service, or the IRS, with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS will agree with such statements and conclusions or will not take a contrary position regarding the tax consequences described herein, or that any such contrary position would not be sustained by a court.

PERSONS CONSIDERING THE PURCHASE OF OUR COMMON STOCK PURSUANT TO THIS OFFERING SHOULD CONSULT THEIR OWN TAX ADVISORS CONCERNING THE U.S. FEDERAL INCOME TAX CONSEQUENCES OF ACQUIRING, OWNING AND DISPOSING OF OUR COMMON STOCK IN LIGHT OF THEIR PARTICULAR SITUATIONS AS WELL AS ANY CONSEQUENCES ARISING UNDER THE LAWS OF ANY OTHER TAXING JURISDICTION, INCLUDING ANY STATE, LOCAL OR NON-U.S. TAX CONSEQUENCES OR ANY U.S. FEDERAL NON-INCOME TAX CONSEQUENCES, AND THE POSSIBLE APPLICATION OF TAX TREATIES. IN ADDITION, SIGNIFICANT CHANGES IN U.S. FEDERAL TAX LAWS WERE RECENTLY ENACTED. PROSPECTIVE INVESTORS SHOULD ALSO CONSULT WITH THEIR TAX ADVISORS WITH

RESPECT TO SUCH CHANGES IN U.S. TAX LAW AS WELL AS POTENTIAL CONFORMING CHANGES IN STATE TAX LAWS.

For the purposes of this discussion, a "Non-U.S. Holder" is a beneficial owner of common stock that is not a U.S. Holder or a partnership for U.S. federal income tax purposes. A "U.S. Holder" means a beneficial owner of our common stock that is, for U.S. federal income tax purposes, (a) an individual citizen or resident of the United States, (b) a corporation (or other entity taxable as a corporation for U.S. federal income tax purposes), created or organized in or under the laws of the United States, any state thereof or the District of Columbia, (c) an estate the income of which is subject to U.S. federal income taxation regardless of its source, or (d) a trust if it (1) is subject to the primary supervision of a court within the United States and one or more U.S. persons (within the meaning of Section 7701(a)(30) of the Code) have the authority to control all substantial decisions of the trust or (2) has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

If you are an individual non-U.S. citizen, you may, in some cases, be deemed to be a resident alien (as opposed to a nonresident alien) by virtue of being present in the United States for at least 31 days in the calendar year and for an aggregate of at least 183 days during a three-year period ending in the current calendar year. Generally, for this purpose, all the days present in the current year, one-third of the days present in the immediately preceding year, and one-sixth of the days present in the second preceding year, are counted.

Resident aliens are generally subject to U.S. federal income tax as if they were U.S. citizens. Individuals who are uncertain of their status as resident or nonresident aliens for U.S. federal income tax purposes are urged to consult their own tax advisors regarding the U.S. federal income tax consequences of the ownership or disposition of our common stock.

Distributions

We do not expect to make any distributions on our common stock in the foreseeable future. If we do make distributions on our common stock, however, such distributions made to a Non-U.S. Holder of our common stock will constitute dividends for U.S. tax purposes to the extent paid out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles). Distributions in excess of our current and accumulated earnings and profits will constitute a return of capital that is applied against and reduces, but not below zero, a Non-U.S. Holder's adjusted tax basis in our common stock. Any remaining excess will be treated as gain realized on the sale or exchange of our common stock as described below under the section entitled "— Gain on Disposition of Our Common Stock."

Any distribution on our common stock that is treated as a dividend paid to a Non-U.S. Holder that is not effectively connected with the holder's conduct of a trade or business in the United States will generally be subject to withholding tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and the Non-U.S. Holder's country of residence. To obtain a reduced rate of withholding under a treaty, a Non-U.S. Holder generally will be required to provide the applicable withholding agent with a properly executed IRS Form W-8BEN, IRS Form W-8BEN-E or other appropriate form, certifying the Non-U.S. Holder's entitlement to benefits under that treaty. Such form must be provided prior to the payment of dividends and must be updated periodically. If a Non-U.S. Holder holds stock through a financial institution or other agent acting on the holder's behalf, the holder will be required to provide appropriate documentation to such agent. The holder's agent may then be required to provide certification to the applicable withholding agent, either directly or through other intermediaries. If you are eligible for a reduced rate of U.S. withholding tax under an income tax treaty, you should consult with your own tax advisor to determine if you are able to obtain a refund of any excess amounts withheld by timely filing an appropriate claim for a refund with the IRS.

We generally are not required to withhold tax on dividends paid to a Non-U.S. Holder that are effectively connected with the holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, are attributable to a permanent establishment that the holder maintains in the United States) if a properly executed IRS Form W-8ECI, stating that the dividends are so connected, is furnished to us (or, if stock is held through a financial institution or other agent, to the applicable withholding agent). In general, such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular graduated rates applicable to U.S. persons. A corporate Non-U.S. Holder receiving effectively connected dividends may also be subject to an additional "branch profits tax," which is imposed, under certain circumstances, at a rate of 30% (or such lower rate as may be specified by an applicable treaty) on the corporate Non-U.S. Holder's effectively connected earnings and profits, subject to certain adjustments.

See also the section below entitled "— Foreign Accounts" for additional withholding rules that may apply to dividends paid to certain foreign financial institutions or non-financial foreign entities.

Gain on Disposition of Our Common Stock

Subject to the discussions below under the sections entitled "— Backup Withholding and Information Reporting," a Non-U.S. Holder generally will not be subject to U.S. federal income or withholding tax with respect to gain realized on a sale or other disposition of our common stock unless (a) the gain is effectively connected with a trade or business of the holder in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment that the holder maintains in the United States), (b) the Non-U.S. Holder is a nonresident alien individual and is present in the United States for 183 or more days in the taxable year of the disposition and certain other conditions are met, or (c) we are or have been a "United States real property holding corporation" within the meaning of Code Section 897(c)(2) at any time within the shorter of the five-year period preceding such disposition or the holder's holding period in the common stock.

If you are a Non-U.S. Holder described in (a) above, you will be required to pay tax on the net gain derived from the sale at the regular graduated U.S. federal income tax rates applicable to U.S. persons. Corporate Non-U.S. Holders described in (a) above may also be subject to the additional branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. If you are an individual Non-U.S. Holder described in (b) above, you will be required to pay a flat 30% tax on the gain derived from the sale, which gain may be offset by certain U.S. source capital losses (even though you are not considered a resident of the United States), provided you have timely filed U.S. federal income tax returns with respect to such losses. With respect to (c) above, in general, we would be a United States real property holding corporation if U.S. real property interests as defined in the Code and the U.S. Treasury Regulations comprised (by fair market value) at least half of our worldwide real property interests plus our other assets used or held for use in a trade or business. We believe that we are not, and do not anticipate becoming, a United States real property holding corporation. However, there can be no assurance that we will not become a United States real property holding corporation in the future. Even if we were to be treated as a U.S. real property holding corporation, gain realized by a Non-U.S. Holder on a disposition of our common stock would not be subject to U.S. federal income tax so long as (1) the Non-U.S. Holder owned, directly, indirectly or constructively, no more than five percent of our common stock at all times within the shorter of (i) the five-year period preceding the disposition or (ii) the holder's holding period and (2) our common stock is regularly traded on an established securities market. There can be no assurance that our common stock will qualify as regularly traded on an established securities market.

U.S. Federal Estate Tax

The estates of nonresident alien individuals generally are subject to U.S. federal estate tax on property with a U.S. situs. Because we are a U.S. corporation, our common stock will be U.S. situs property and, therefore, will be included in the taxable estate of a nonresident alien decedent, unless an applicable estate

tax treaty between the United States and the decedent's country of residence provides otherwise. The terms "resident" and "nonresident" are defined differently for U.S. federal estate tax purposes than for U.S. federal income tax purposes. Investors are urged to consult their own tax advisors regarding the U.S. federal estate tax consequences of the ownership or disposition of our common stock.

Backup Withholding and Information Reporting

Generally, we or certain financial middlemen must report information to the IRS with respect to any dividends we pay on our common stock including the amount of any such dividends, the name and address of the recipient, and the amount, if any, of tax withheld. A similar report is sent to the holder to whom any such dividends are paid. Pursuant to tax treaties or certain other agreements, the IRS may make its reports available to tax authorities in the recipient's country of residence.

Dividends paid by us (or our paying agents) to a Non-U.S. Holder may also be subject to U.S. backup withholding. U.S. backup withholding generally will not apply to a Non-U.S. Holder who provides a properly executed IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable, or otherwise establishes an exemption, provided that the applicable withholding agent does not have actual knowledge or reason to know the holder is a U.S. person.

Under current U.S. federal income tax law, U.S. information reporting and backup withholding requirements generally will apply to the proceeds of a disposition of our common stock effected by or through a U.S. office of any broker, U.S. or non-U.S., unless the Non-U.S. Holder provides a properly executed IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable, or otherwise meets documentary evidence requirements for establishing non-U.S. person status or otherwise establishes an exemption. Generally, U.S. information reporting and backup withholding requirements will not apply to a payment of disposition proceeds to a Non-U.S. Holder where the transaction is effected outside the United States through a non-U.S. office of a non-U.S. broker. Information reporting and backup withholding requirements may, however, apply to a payment of disposition proceeds if the broker has actual knowledge, or reason to know, that the holder is, in fact, a U.S. person. For information reporting purposes, certain brokers with substantial U.S. ownership or operations will generally be treated in a manner similar to U.S. brokers.

Backup withholding is not an additional tax. If backup withholding is applied to you, you should consult with your own tax advisor to determine whether you have overpaid your U.S. federal income tax, and whether you are able to obtain a tax refund or credit of the overpaid amount.

Foreign Accounts

In addition, U.S. federal withholding taxes may apply under the Foreign Account Tax Compliance Act, or FATCA, on certain types of payments, including dividends paid to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on our common stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (1) the foreign financial institution agrees to undertake certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. The 30% federal withholding tax described in this paragraph cannot be reduced under an income tax treaty with the United States. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States-owned foreign entities" (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United

States governing FATCA may be subject to different rules. Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally also would apply to payments of gross proceeds from the sale or other disposition of common stock on or after January 1, 2019. Under recently proposed regulations, however, no withholding will apply with respect to payments of gross proceeds. The preamble to the proposed regulations specifies that taxpayers are permitted to rely on such proposed regulations pending finalization.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR REGARDING THE TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAW, AS WELL AS TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL, NON-U.S. OR U.S. FEDERAL NON-INCOME TAX LAWS SUCH AS ESTATE AND GIFT TAX.

UNDERWRITING

Subject to the terms and conditions set forth in the underwriting agreement, dated , 2019, by and among us and Jefferies LLC, Cowen and Company, LLC, BMO Capital Markets Corp. and Wells Fargo Securities, LLC, as the representatives of the underwriters named below, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the respective number of shares of common stock shown opposite its name below:

Underwriter	Number of Shares
Jefferies LLC	
Cowen and Company, LLC	
BMO Capital Markets Corp.	
Wells Fargo Securities, LLC	
Total	

The underwriting agreement provides that the obligations of the several underwriters are subject to certain conditions precedent such as the receipt by the underwriters of officers' certificates and legal opinions and approval of certain legal matters by their counsel. The underwriting agreement provides that the underwriters will purchase all of the shares of common stock if any of them are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated. We have agreed to indemnify the underwriters and certain of their controlling persons against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make in respect of those liabilities.

The underwriters have advised us that, following the completion of this offering, they currently intend to make a market in the common stock as permitted by applicable laws and regulations. However, the underwriters are not obligated to do so, and the underwriters may discontinue any market-making activities at any time without notice in their sole discretion. Accordingly, no assurance can be given as to the liquidity of the trading market for the common stock, that you will be able to sell any of the common stock held by you at a particular time or that the prices that you receive when you sell will be favorable.

The underwriters are offering the shares of common stock subject to their acceptance of the shares of common stock from us and subject to prior sale. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commission and Expenses

The underwriters have advised us that they propose to offer the shares of common stock to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers, which may include the underwriters, at that price less a concession not in excess of $ per share of common stock. After the offering, the initial public offering price and concession to dealers may be reduced by the representatives. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus.

The following table shows the public offering price, the underwriting discounts and commissions that we are to pay the underwriters and the proceeds, before expenses, to us in connection with this offering. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Per Share		Total	
	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares
Public offering price	$	$	$	$
Underwriting discounts and commissions paid by us	$	$	$	$
Proceeds to us, before expenses	$	$	$	$

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately $. We have also agreed to reimburse the underwriters for certain of their expenses in an amount up to $.

Determination of Offering Price

Prior to this offering, there has not been a public market for our common stock. Consequently, the initial public offering price for our common stock will be determined by negotiations between us and the representatives. Among the factors to be considered in these negotiations will be prevailing market conditions, our financial information, market valuations of other companies that we and the underwriters believe to be comparable to us, estimates of our business potential, the present state of our development and other factors deemed relevant.

We offer no assurances that the initial public offering price will correspond to the price at which the common stock will trade in the public market subsequent to the offering or that an active trading market for the common stock will develop and continue after the offering.

Listing

We intend to apply to have our common stock approved for listing on The Nasdaq Global Market under the trading symbol "MORF."

Option to Purchase Additional Shares

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase, from time to time, in whole or in part, up to an aggregate of shares from us at the public offering price set forth on the cover page of this prospectus, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to specified conditions, to purchase a number of additional shares proportionate to that underwriter's initial purchase commitment as indicated in the table above. This option may be exercised only if the underwriters sell more shares than the total number set forth on the cover page of this prospectus.

No Sales of Similar Securities

We, our officers, directors and holders of all or substantially all our outstanding capital stock and other securities have agreed, subject to specified exceptions, not to directly or indirectly:

- sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open "put equivalent position" within the meaning of Rule 16a-l(h) under the Securities Exchange Act of 1934, as amended, or
- otherwise dispose of any shares of common stock, options or warrants to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock currently or hereafter owned either of record or beneficially, or

- publicly announce an intention to do any of the foregoing for a period of 180 days after the date of this prospectus.

This restriction terminates after the close of trading of the common stock on and including the 180th day after the date of this prospectus.

Jefferies LLC and Cowen and Company, LLC may, with respect to our officers, directors and our holders, and the representatives, with respect to us, in their sole discretion and at any time or from time to time before the termination of the 180-day period release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our shareholders who will execute a lock-up agreement, providing consent to the sale of shares prior to the expiration of the lock-up period.

Stabilization

The underwriters have advised us that they, pursuant to Regulation M under the Securities Exchange Act of 1934, as amended, and certain persons participating in the offering may engage in short sale transactions, stabilizing transactions, syndicate covering transactions or the imposition of penalty bids in connection with this offering. These activities may have the effect of stabilizing or maintaining the market price of the common stock at a level above that which might otherwise prevail in the open market. Establishing short sales positions may involve either "covered" short sales or "naked" short sales.

"Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares of our common stock in this offering. The underwriters may close out any covered short position by either exercising their option to purchase additional shares of our common stock or purchasing shares of our common stock in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares.

"Naked" short sales are sales in excess of the option to purchase additional shares of our common stock. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering.

A stabilizing bid is a bid for the purchase of shares of common stock on behalf of the underwriters for the purpose of fixing or maintaining the price of the common stock. A syndicate covering transaction is the bid for or the purchase of shares of common stock on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering. Similar to other purchase transactions, the underwriter's purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. A penalty bid is an arrangement permitting the underwriters to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the common stock originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. The underwriters are not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

The underwriters may also engage in passive market making transactions in our common stock on The Nasdaq Global Market in accordance with Rule 103 of Regulation M during a period before the

commencement of offers or sales of shares of our common stock in this offering and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, that bid must then be lowered when specified purchase limits are exceeded.

Electronic Distribution

A prospectus in electronic format may be made available by e-mail or on the web sites or through online services maintained by one or more of the underwriters or their affiliates. In those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriters may agree with us to allocate a specific number of shares of common stock for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriters' web sites and any information contained in any other web site maintained by any of the underwriters is not part of this prospectus, has not been approved and/or endorsed by us or the underwriters and should not be relied upon by investors.

Other Activities and Relationships

The underwriters and certain of their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments issued by us and our affiliates. If the underwriters or their respective affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their respective affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriters and certain of their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Disclaimers About Non-U.S. Jurisdictions

Australia

This prospectus is not a disclosure document for the purposes of Australia's Corporations Act 2001 (Cth) of Australia, or Corporations Act, has not been lodged with the Australian Securities & Investments Commission and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus in Australia:

You confirm and warrant that you are either:

- a "sophisticated investor" under section 708(8)(a) or (b) of the Corporations Act;
- a "sophisticated investor" under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to the Company which complies with the requirements of

section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made;

- a person associated with the Company under Section 708(12) of the Corporations Act; or
- a "professional investor" within the meaning of section 708(11)(a) or (b) of the Corporations Act.

To the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor, associated person or professional investor under the Corporations Act any offer made to you under this prospectus is void and incapable of acceptance.

You warrant and agree that you will not offer any of the securities issued to you pursuant to this prospectus for resale in Australia within 12 months of those securities being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

Canada

(A) Resale Restrictions. The distribution of common stock in Canada is being made only in the provinces of Ontario, Quebec, Alberta and British Columbia on a private placement basis exempt from the requirement that we prepare and file a prospectus with the securities regulatory authorities in each province where trades of these securities are made. Any resale of the common stock in Canada must be made under applicable securities laws which may vary depending on the relevant jurisdiction, and which may require resales to be made under available statutory exemptions or under a discretionary exemption granted by the applicable Canadian securities regulatory authority. Purchasers are advised to seek legal advice prior to any resale of the securities.

(B) Representations of Canadian Purchasers. By purchasing common stock in Canada and accepting delivery of a purchase confirmation, a purchaser is representing to us and the dealer from whom the purchase confirmation is received that:

- the purchaser is entitled under applicable provincial securities laws to purchase the common stock without the benefit of a prospectus qualified under those securities laws as it is an "accredited investor" as defined under National Instrument 45-106 — *Prospectus Exemptions*,
- the purchaser is a "permitted client" as defined in National Instrument 31-103 — *Registration Requirements, Exemptions and Ongoing Registrant Obligations*,
- where required by law, the purchaser is purchasing as principal and not as agent, and
- the purchaser has reviewed the text above under Resale Restrictions.

(C) Conflicts of Interest. Canadian purchasers are hereby notified that the representatives are relying on the exemption set out in section 3A.3 or 3A.4, if applicable, of National Instrument 33-105 — *Underwriting Conflicts* from having to provide certain conflict of interest disclosure in this document.

(D) Statutory Rights of Action. Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if the offering memorandum (including any amendment thereto) such as this document contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser of these securities in Canada should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

(E) Enforcement of Legal Rights. All of our directors and officers as well as the experts named herein may be located outside of Canada and, as a result, it may not be possible for Canadian purchasers to effect service of process within Canada upon us or those persons. All or a substantial portion of our assets and the assets of those persons may be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against us or those persons in Canada or to enforce a judgment obtained in Canadian courts against us or those persons outside of Canada.

(F) Taxation and Eligibility for Investment. Canadian purchasers of common stock should consult their own legal and tax advisors with respect to the tax consequences of an investment in the common stock in their particular circumstances and about the eligibility of the common stock for investment by the purchaser under relevant Canadian legislation.

European Economic Area

Any distributor subject to MiFID II that is offering, selling or recommending the common stock is responsible for undertaking its own target market assessment in respect of the common stock and determining its own distribution channels for the purposes of the MiFID product governance rules under Commission Delegated Directive (EU) 2017/593, or the Delegated Directive. Neither we nor the underwriters make any representations or warranties as to a distributor's compliance with the Delegated Directive.

In relation to each member state of the European Economic Area which has implemented the Prospectus Directive, or a Relevant Member State, an offer to the public of any shares of common stock which are the subject of the offering contemplated by this prospectus may not be made in that Relevant Member State except that an offer to the public in that Relevant Member State of any shares of common stock may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

- to any legal entity which is a "qualified investor" as defined in the Prospectus Directive;
- to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the underwriters or the underwriters nominated by us for any such offer; or
- in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares of common stock shall require us or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer shares of common stock to the public" in relation to the shares of common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares of common stock to be offered so as to enable an investor to decide to purchase or subscribe to the shares of common stock, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Hong Kong

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong, or SFO, and any rules made under that Ordinance; or in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong, or CO, or which do not constitute an offer or invitation to the public for the purpose of the CO or the SFO. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under that Ordinance.

This prospectus has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, or the Securities Law, and has not been filed with or approved by the Israel Securities Authority. In Israel, this prospectus is being distributed only to, and is directed only at, and any offer of the common stock is directed only at, (i) a limited number of persons in accordance with the Israeli Securities Law and (ii) investors listed in the first addendum, or the Addendum, to the Israeli Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and "qualified individuals," each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case, purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors are required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

Japan

The offering has not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948 of Japan, as amended), or FIEL, and the underwriters will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEL and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

This prospectus has not been and will not be lodged or registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the common stock may not be circulated or distributed, nor may the common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or SFA, (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

- a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the securities pursuant to an offer made under Section 275 of the SFA except:

- to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- where no consideration is or will be given for the transfer;
- where the transfer is by operation of law;
- as specified in Section 276(7) of the SFA; or
- as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Solely for the purposes of its obligations pursuant to Section 309B of the SFA, we have determined, and hereby notify all relevant persons (as defined in the CMP Regulations 2018), that the shares are "prescribed capital markets products" (as defined in the CMP Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Switzerland

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This prospectus has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this prospectus nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus nor any other offering or marketing material relating to the offering, the Company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

United Kingdom

This prospectus is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or Order, and/or (ii) high net worth entities falling within Article 49(2)(a) to (d) of the Order and other persons to whom it may lawfully be communicated, or a Relevant Person.

This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any person in the United Kingdom that is not a Relevant Person should not act or rely on this document or any of its content.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus will be passed upon for us by Fenwick & West LLP, San Francisco, California. Certain legal matters relating to the offering will be passed upon for the underwriters by Cooley LLP, Boston, Massachusetts.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements as of December 31, 2017 and December 31, 2018 and for each of the two years in the period ended December 31, 2018, as set forth in their report. We have included our financial statements in the prospectus and elsewhere in the registration statement in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

ADDITIONAL INFORMATION

We have filed with the Securities and Exchange Commission, or SEC, a registration statement on Form S-1 (File Number 333-) under the Securities Act of 1933, as amended, with respect to the shares of common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits filed therewith. For further information about us and the common stock offered hereby, reference is made to the registration statement and the exhibits filed therewith. Statements contained in this prospectus concerning the contents of any contract or any other document are not necessarily complete, please see the copy of the contract or document that has been filed for the complete contents of that contract or document. Each statement in this prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit. The exhibits to the registration statement should be reviewed for the complete contents of these contracts and documents.

We currently do not file periodic reports with the SEC. Upon the completion of this offering, we will be required to file periodic reports, proxy statements and other information with the SEC pursuant to the Securities Exchange Act of 1934, as amended. The SEC maintains a website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC. The address of the website is www.sec.gov.

We also maintain a website at www.morphictx.com. Upon completion of this offering, you may access these materials at our website free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained in, or that can be accessed through, our website is not a part of, and is not incorporated into, this prospectus.

MORPHIC HOLDING, INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Morphic Holding, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Morphic Holding, Inc. (the Company) as of December 31, 2017 and 2018, the related consolidated statements of operations and comprehensive loss, convertible preferred stock and stockholders' (deficit) equity and cash flows for each of the two years in the period ended December 31, 2018, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2017 and 2018, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2017.
Boston, Massachusetts
April 12, 2019

MORPHIC HOLDING, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except unit, share and per share data)

	December 31, 2017	December 31, 2018	March 31, 2019 (unaudited)	Pro forma March 31, 2019 (unaudited)
Assets				
Current assets:				
Cash and cash equivalents	$ 20,750	$ 185,901	$ 42,419	$ 42,419
Marketable securities	—	—	143,651	143,651
Accounts receivable	—	—	378	378
Prepaid expenses and other current assets	479	1,222	1,280	1,280
Total current assets	21,229	187,123	187,728	187,728
Property and equipment, net	1,725	1,843	2,233	2,233
Restricted cash	275	275	275	275
Other long-term assets	13	64	55	55
Total assets	$ 23,242	$ 189,305	$ 190,291	$ 190,291
Liabilities				
Current liabilities:				
Accounts payable	$ 883	$ 1,745	$ 2,887	$ 2,887
Accrued expenses	1,296	3,239	3,463	3,463
Deferred revenue, current portion	—	29,862	34,277	34,277
Long term debt, current portion	315	—	—	—
Deferred rent, current portion	23	57	66	66
Total current liabilities	2,517	34,903	40,693	40,693
Long-term liabilities:				
Deferred revenue, net of current portion	—	66,781	66,675	66,675
Long-term debt, net of current portion	315	—	—	—
Accrued interest payable	30	—	—	—
Deferred rent, net of current portion	367	306	287	287
Other long-term liabilities	19	58	55	30
Total liabilities	3,248	102,048	107,710	107,685
Preferred units:				
Series Seed convertible preferred units, 11,987,661 units authorized, 11,927,889 units issued and outstanding as of December 31, 2017 (aggregate liquidation preference of $8,980 at December 31, 2017); no units authorized, issued, or outstanding pro forma (unaudited)	8,658	—	—	—
Series A convertible preferred units, 49,047,619 units authorized and 39,238,094 units issued and outstanding as of December 31, 2017 (liquidation preference of $41,200 as of December 31, 2017); no units authorized, issued, or outstanding pro forma (unaudited)	41,029	—	—	—
Preferred shares:				
Series Seed convertible preferred shares, $0.0001 par value, 11,967,689 shares authorized, 11,927,889 shares issued and outstanding as of December 31, 2018 and March 31, 2019 (aggregate liquidation preference of $8,980 at December 31, 2018 and March 31, 2019); no shares issued or outstanding pro forma (unaudited)	—	8,658	8,658	—
Series A convertible preferred shares, $0.0001 par value, 49,047,619 shares authorized, issued, and outstanding as of December 31, 2018 and March 31, 2019 (liquidation preference of $51,500 as of December 31, 2018 and March 31, 2019); no shares issued or outstanding pro forma (unaudited)	—	51,320	51,320	—
Series B convertible preferred shares, $0.0001 par value, 61,538,454 shares authorized, issued, and outstanding as of December 31, 2018 and March 31, 2019 (liquidation preference of $80,000 as of December 31, 2018 and March 31, 2019); no shares issued or outstanding pro forma (unaudited)	—	79,831	79,831	—
Stockholders' (Deficit) Equity				
Common units, 77,000,000 units authorized, 5,896,584 units issued and outstanding as of December 31, 2017; no units authorized, issued or outstanding pro forma (unaudited)	—	—	—	—
Common shares, $0.0001 par value, 151,000,000 shares authorized, as of December 31, 2018 and March 31, 2019, 10,687,985 shares and 11,270,581 shares issued and outstanding as of December 31, 2018 and March 31, 2019, respectively; 133,784,543 shares issued and outstanding, pro forma (unaudited)	—	1	1	14
Additional paid-in capital	661	1,632	2,131	141,952
Accumulated other comprehensive income:				
Unrealized holding gain on marketable securities	—	—	25	25
Total accumulated other comprehensive income	—	—	25	25
Accumulated deficit	(30,354)	(54,185)	(59,385)	(59,385)
Total stockholders' (deficit) equity	(29,693)	(52,552)	(57,228)	82,606
Total liabilities and stockholders' (deficit) equity	$ 23,242	$ 189,305	$ 190,291	$ 190,291

The accompanying notes are an integral part of these consolidated financial statements.

MORPHIC HOLDING, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(In thousands, except unit, share, per unit, and per share data)

	Year Ended December 31,		Three Months Ended March 31,	
	2017	2018	2018	2019
			(unaudited)	
Collaboration revenue — related party	$ —	$ 3,358	$ —	$ 5,570
Collaboration revenue — other	—	—	—	498
Total collaboration revenue	—	3,358	—	6,068
Operating expenses:				
Research and development	14,103	22,631	4,284	10,370
General and administrative	2,826	5,355	935	1,832
Total operating expenses	16,929	27,986	5,219	12,202
Loss from operations	(16,929)	(24,628)	(5,219)	(6,134)
Other income (expense):				
Interest income, net	14	871	55	1,063
Other expense, net	(5)	(74)	(16)	—
Total other income	9	797	39	1,063
Loss before provision for income taxes	(16,920)	(23,831)	(5,180)	(5,071)
Provision for income taxes	—	—	—	(129)
Net loss	$ (16,920)	$ (23,831)	$ (5,180)	$ (5,200)
Net loss per unit, basic and diluted	$ (2.87)		$ (0.88)	
Net loss per share, basic and diluted		$ (3.82)		$ (0.47)
Weighted average common units outstanding, basic and diluted	5,896,584		5,896,584	
Weighted average common shares outstanding, basic and diluted		6,237,889		10,962,388
Pro-forma net loss per share, basic and diluted (unaudited)		$ (0.31)		$ (0.04)
Pro-forma weighted average common shares outstanding, basic and diluted (unaudited)		77,596,055		133,476,350
Comprehensive loss:				
Net loss	$ (16,920)	$ (23,831)	$ (5,180)	$ (5,200)
Other comprehensive income (loss):				
Unrealized holding gains on marketable securities	—	—	—	25
Total other comprehensive income	—	—	—	25
Comprehensive loss	$ (16,920)	$ (23,831)	$ (5,180)	$ (5,175)

The accompanying notes are an integral part of these consolidated financial statements.

MORPHIC HOLDING, INC.

CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' (DEFICIT) EQUITY

(In thousands, except unit and share data)

	Series Seed Convertible Preferred Units		Series Seed Convertible Preferred Shares		Series A Convertible Preferred Units		Series A Convertible Preferred Shares		Series B Convertible Preferred Units		Series B Convertible Preferred Shares		Common Units		Common Shares		Addit'l Paid-in Capital	Accumulated Deficit	Total Stockholders' (Deficit) Equity
	Units	Amount	Shares	Amount	Units	Amount	Shares	Amount	Units	Amount	Shares	Amount	Units	Amount	Shares	Amount			
Balance at December 31, 2016	**11,668,345**	**$ 8,507**	**—**	**$ —**	**19,619,047**	**$ 20,435**	**—**	**$ —**	**—**	**$ —**	**—**	**$ —**	**5,896,584**	**$ —**	**—**	**$ —**	**$ 347**	**$ (13,434)**	**$ (13,087)**
Issuance of Series A Preferred Units in exchange for services rendered	259,544	151	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Issuance of Series A Preferred Units October 31, 2017, net of offering costs of $6	—	—	—	—	19,619,047	20,594	—	—	—	—	—	—	—	—	—	—	—	—	—
Reclassification of warrants to purchase preferred units to member's equity	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25	—	25
Equity-based compensation expense	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	289	—	289
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(16,920)	(16,920)
Balance at December 31, 2017	**11,927,889**	**8,658**	**—**	**—**	**39,238,094**	**41,029**	**—**	**—**	**—**	**—**	**—**	**—**	**5,896,584**	**—**	**—**	**—**	**661**	**(30,354)**	**(29,693)**
Issuance of Series A Preferred Units August 10, 2018, net of offering costs of $9	—	—	—	—	9,809,525	10,291	—	—	—	—	—	—	—	—	—	—	—	—	—
Issuance of Series B Preferred Units September 25, 2018, net of offering costs of $169	—	—	—	—	—	—	—	—	61,538,454	79,831	—	—	—	—	—	—	—	—	—
Effect of Reorganization	(11,927,889)	(8,658)	11,927,889	8,658	(49,047,619)	(51,320)	49,047,619	51,320	(61,538,454)	(79,831)	61,538,454	79,831	(5,896,584)	—	5,896,584	1	(1)	—	—
Exchange of incentive units for common stock in connection with the reorganization	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,606,872	—	—	—	—
Vesting of restricted shares	—	—	—	—	—	—	—	—	—	—	—	—	—	—	184,529	—	—	—	—
Equity-based compensation expense	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	997	—	997
Reclassification of warrants to purchase preferred units to liability																	(25)	—	(25)
Net Loss	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(23,831)	(23,831)
Balance at December 31, 2018	**—**	**—**	**11,927,889**	**$ 8,658**	**—**	**—**	**49,047,619**	**$ 51,320**	**—**	**—**	**61,538,454**	**$ 79,831**	**—**	**—**	**10,687,985**	**$ 1**	**$ 1,632**	**$ (54,185)**	**$ (52,552)**

The accompanying notes are an integral part of these consolidated financial statements.

MORPHIC HOLDING, INC.

CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' (DEFICIT) EQUITY (Continued)

(In thousands, except unit and share data)

	Series Seed Convertible Preferred Shares		Series A Convertible Preferred Shares		Series B Convertible Preferred Shares		Common Shares		Addit'l Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount				
Balance at December 31, 2018	**11,927,889**	**$ 8,658**	**49,047,619**	**$ 51,320**	**61,538,454**	**$ 79,831**	**10,687,985**	**$ 1**	**$ 1,632**	**$ (54,185)**	**$ —**	**$ (52,552)**
Equity-based compensation expense	—	—	—	—	—	—	—	—	499	—	—	499
Unrealized holding gains on marketable securities	—	—	—	—	—	—	—	—	—	—	25	25
Vesting of restricted shares	—	—	—	—	—	—	582,596	—	—	—	—	—
Net Loss	—	—	—	—	—	—				(5,200)	—	(5,200)
Balance at March 31, 2019	**11,927,889**	**8,658**	**49,047,619**	**51,320**	**61,538,454**	**79,831**	**11,270,581**	**1**	**2,131**	**(59,385)**	**25**	**(57,228)**
Conversion of convertible preferred stock into common stock (unaudited)	(11,927,889)	(8,658)	(49,047,619)	(51,320)	(61,538,454)	(79,831)	122,513,962	13	139,797	—		139,810
Reclassificaiton of warrants to purchase preferred units to stockholders' equity (unaudited)	—	—	—	—	—	—	—	—	24	—	—	24
Pro forma balance at March 31, 2019 (unaudited)	**—**	**$ —**	**—**	**$ —**	**—**	**$ —**	**133,784,543**	**$ 14**	**$ 141,952**	**$ (59,385)**	**$ 25**	**$ 82,606**

MORPHIC HOLDING, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		Three Months Ended March 31,	
	2017	2018	2018	2019
			(unaudited)	
Cash flows from operating activities:				
Net loss	$ (16,920)	$ (23,831)	$ (5,180)	$ (5,200)
Adjustments to reconcile net loss to net cash (used in) provided by operating activities:				
Depreciation and amortization	434	539	127	166
Premium amortization and discount accretion on marketable securities	—	—	—	(516)
Equity-based compensation	289	997	123	499
Fair value of seed preferred units issued for services rendered	151	—	—	—
Loss on disposal of property and equipment	5	1	—	—
Non-cash interest expense	18	43	9	—
Loss on early debt extinguishment	—	28	—	—
Change in operating assets and liabilities:				
Accounts receivable	—	—	—	(378)
Prepaid expenses and other current assets	(296)	(743)	38	(58)
Other long-term assets	(13)	(51)	4	9
Accounts payable	285	862	213	1,142
Accrued expenses	388	1,888	(757)	224
Deferred revenue	—	96,643	—	4,309
Deferred rent	227	(27)	(3)	(9)
Other long-term liabilities	17	(12)	—	—
Net cash (used in) provided by operating activities	(15,415)	76,337	(5,426)	188
Cash flows from investing activities:				
Purchases of marketable securities	—	—	—	(143,111)
Purchase of property and equipment	(945)	(659)	(231)	(559)
Proceeds from the disposal of lab equipment	38	3	—	—
Net cash used in investing activities	(907)	(656)	(231)	(143,670)
Cash flows from financing activities:				
Proceeds from issuance of preferred units, net of issuance costs	20,594	90,122	—	—
Repayment of debt	(333)	(652)	(83)	—
Net cash provided by (used in) financing activities	20,261	89,470	(83)	—
Net increase (decrease) in cash and cash equivalents and restricted cash	3,939	165,151	(5,740)	(143,482)
Cash and cash equivalents and restricted cash, beginning of period	17,086	21,025	21,025	186,176
Cash and cash equivalents and restricted cash, end of period	$ 21,025	$ 186,176	$ 15,285	$ 42,694
Supplemental cash flow information:				
Cash paid for interest	$ 31	$ 68	$ 7	$ —

The accompanying notes are an integral part of these consolidated financial statements.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

1. Nature of the Business and Basis of Presentation

Organization

Morphic Holding, Inc. was formed under the laws of the State of Delaware in August 2014 under the name Integrin Rock, LLC. The Company subsequently changed its name to Morphic Rock Holding, LLC in October 2014 and then to Morphic Holding, LLC in June 2016. As more fully described in Note 7 below, on December 5, 2018, the Company completed a series of transactions (the "Reorganization") pursuant to which Morphic Holding, LLC was converted in a tax free reorganization into Morphic Holding, Inc. and three wholly-owned subsidiaries, namely Lazuli, Inc., Tourmaline, Inc, and Phyllite, Inc, were merged with and into another wholly-owned subsidiary, Morphic Therapeutic, Inc. As part of the Reorganization, all convertible preferred units and common units of Morphic Holding, LLC issued and outstanding immediately prior to the Reorganization were exchanged for shares of Morphic Holding, Inc. capital stock of the same class or series on a one-for-one basis. Previously outstanding vested and unvested incentive units were exchanged for an equal number of shares of common stock or restricted common stock, respectively. The restricted common stock was issued with the same vesting terms as the unvested incentive units held immediately prior to the Reorganization.

Upon consummation of the Reorganization, the reporting entity that these financial statements relate became Morphic Holding, Inc. At the time of the Reorganization, the Company created a Massachusetts Securities Corporation (the "Security Corporation") to take advantage of the favorable tax treatment of income earned on securities held within such entity. As of March 31, 2019, all of the Company's excess funds were invested through the Security Corporation.

The Company is a biopharmaceutical company applying proprietary insights into integrins to discover and develop first-in-class oral small-molecule integrin therapeutics. Integrins are a target class with multiple approved drugs for the treatment of serious chronic diseases, including autoimmune, cardiovascular and metabolic diseases, fibrosis, and cancer. Despite significant unsuccessful efforts, we believe tremendous untapped potential remains for us to develop oral integrin therapies. The Company has created the Morphic integrin technology platform, on MInT Platform, by leveraging its unique understanding of integrin structure and biology to develop novel product candidates designed to achieve the potency, high selectivity, and pharmaceutical properties required for oral administration.

The Company is subject to risks and uncertainties common to early-stage companies in the biotechnology industry, including, but not limited to, development by competitors of new technological innovations, dependence on key personnel, protection of proprietary technology, compliance with government regulations, and the ability to secure additional capital to fund operations. Product candidates currently under development will require significant additional research and development efforts, including extensive preclinical and clinical testing, and regulatory approval prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel and infrastructure, and extensive compliance-reporting capabilities. Even if the Company's drug development efforts are successful, it is uncertain when, if ever, the Company will realize significant revenue from product sales.

The accompanying financial statements have been prepared on the basis of continuity of operations, realization of assets and the satisfaction of liabilities and commitments in the ordinary course of business. Through March 31, 2019, the Company has funded its operations with the sales of convertible preferred stock, payments received in connection with collaboration agreements, and borrowings under loan

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

1. Nature of the Business and Basis of Presentation (Continued)

agreements. Since inception, the Company has incurred recurring losses, including net losses of $16.9 million for the year ended December 31, 2017, $23.8 million for the year ended December 31, 2018, and $5.2 million for the three month ended March 31, 2019, respectively. As of December 31, 2018 and March 31, 2019, the Company had an accumulated deficit of $54.2 million and $59.4 million, respectively. The Company expects to continue to generate operating losses for the foreseeable future. As of May 21, 2019, the Company expected that its cash, cash equivalents, and marketable securities would be sufficient to fund its operating expenses and capital expenditure requirements through at least 12 months from the issuance date of these financial statements.

Basis of Presentation

The consolidated financial statements prior to the Reorganization include the accounts of Morphic Holding, LLC and its wholly owned subsidiaries, Lazuli, Inc., Tourmaline, Inc., and Phyllite, Inc. The consolidated financial statements subsequent to the Reorganization include the accounts of Morphic Holding, Inc. and its wholly owned subsidiaries of Morphic Therapeutic, Inc. and Massachusetts Securities Corporation described above. All intercompany balances have been eliminated in consolidation.

These consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States ("GAAP"). Any reference in these notes to applicable guidance is meant to refer to the authoritative United States generally accepted accounting principles as found in the Accounting Standards Codification ("ASC") and Accounting Standards Update ("ASU") of the Financial Accounting Standards Board ("FASB").

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in accordance with GAAP requires management to make estimates and judgments that may affect the reported amounts of assets and liabilities and related disclosures of contingent assets and liabilities at the date of the financial statements and the related reporting of revenues and expenses during the reporting period. Significant estimates of accounting reflected in these consolidated financial statements include, but are not limited to, estimates related to revenue recognition, accrued expenses, the valuation of equity-based compensation, including incentive units, restricted common stock, and stock options, valuation of marketable securities, and income taxes. Actual results could differ from those estimates.

Concentration of Credit Risk and Off-Balance Sheet Risk

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash and cash equivalents. The Company has all cash and cash equivalents at one accredited financial institution, in amounts that exceed federally insured limits. The Company does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

The primary objectives for the Company's investment portfolio are the preservation of capital and maintenance of liquidity. In 2016, the Company adopted its investment policy which allows funds to be held outside bank accounts, but to be invested only in fixed income instruments denominated and payable in U.S. dollars including obligations of the U.S. government and its agencies and money market funds registered according to SEC Rule 2a-7 of the Investment Company Act of 1940. Investments in the money

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

market fund shall be consistent with approved instruments and assets under management must be at least $10.0 billion.

Marketable securities held by the Company consist exclusively of U.S. Treasury securities. All securities must have a readily ascertainable market value, must be readily marketable, and be U.S. dollar denominated.

The Company has no off-balance sheet risk, such as foreign exchange contracts, option contracts, or other foreign-hedging arrangements.

Cash and Cash Equivalents and Restricted Cash

The Company considers highly liquid investments, including U.S. Treasury securities, with a maturity of three months or less when purchased to be cash equivalents. At December 31, 2017 and 2018, and March 31, 2019, cash and cash equivalents include bank demand deposits and money market funds that invest primarily in U.S. government-backed securities and treasuries. Cash equivalents are stated at fair value.

Restricted cash consists of a letter of credit in the amount of $275,000 issued to the landlord of the Company's facility lease. The terms of the letter of credit extend beyond one year. The following table reconciles cash and cash equivalents and restricted cash per the balance sheet to the statements of cash flows:

	As of December 31,		As of March 31,	
	2017	2018	2018	2019
			(unaudited)	
Cash and cash equivalents	$ 20,750	$ 185,901	$ 15,010	$ 42,419
Restricted cash	275	275	275	275
Total cash, cash equivalents, and restricted cash	$ 21,025	$ 186,176	$ 15,285	$ 42,694

Marketable securities

The Company invests funds in high-quality Treasury securities; those securities are classified as available-for-sale and are carried at fair value. Changes in fair value of marketable securities are recorded in other comprehensive income (loss) as net unrealized gains (losses) on marketable securities. The Company recognized $25,000 and $0 in unrealized gains, net for the three-month periods ended March 31, 2019 and 2018, respectively.

Interest income on investments

The Company recognizes interest income from investments in money market funds and available-for-sale securities, including amortization of premium/accretion of discount, on an accrual basis. For the three-months ended March 31, 2019 and 2018, the Company recognized $1.1 million and $55,000 in interest

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

income, respectively. Interest income is included with other income on the statements of operations and comprehensive loss.

Property and Equipment, net

Property and equipment are recorded at cost. Expenditures for major renewals or betterments that extend the useful lives of property and equipment are capitalized; expenditures for maintenance and repairs are charged to expense as incurred. Depreciation is calculated on a straight-line basis over the estimated useful lives of the related asset. Property and equipment are depreciated as follows:

	Estimated Useful Life (in Years)
Laboratory equipment	5
Computers and software	3 - 5
Leasehold improvements	Shorter of the useful life or the remaining term of the lease

Impairment of Long-Lived Assets

Long-lived assets consist of property and equipment. Long-lived assets to be held and used are tested for recoverability whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. Factors that the Company considers in deciding when to perform an impairment review include significant underperformance of the business in relation to expectations, significant negative industry or economic trends, and significant changes or planned changes in the use of the assets. If an impairment review is performed to evaluate a long-lived asset for recoverability, the Company compares forecasts of undiscounted cash flows expected to result from the use and eventual disposition of the long-lived asset to its carrying value. An impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of an asset are less than its carrying amount. The impairment loss would be based on the excess of the carrying value of the impaired asset over its fair value, determined based on discounted cash flows. To date, the Company has not recorded any impairment losses on long-lived assets.

Fair Value Measurements

ASC Topic 820, *Fair Value Measurement* ("ASC 820"), establishes a fair value hierarchy for instruments measured at fair value that distinguishes between assumptions based on market data (observable inputs) and the Company's own assumptions (unobservable inputs). Observable inputs are inputs that market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about the inputs that market participants would use in pricing the asset or liability and are developed based on the best information available in the circumstances. ASC 820 identifies fair value as the exchange price, or exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As a basis for considering market participant

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

assumptions in fair value measurements, ASC 820 establishes a three-tier fair value hierarchy that distinguishes between the following:

Level 1 — Valuations based on quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date.

Level 2 — Valuations based on quoted prices for similar assets or liabilities in markets that are not active or for which all significant inputs are observable, either directly or indirectly, such as quoted market prices, interest rates, and yield curves.

Level 3 — Valuations that require inputs that reflect the Company's own assumptions that are both significant to the fair value measurement and unobservable.

To the extent the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair values requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized as Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

For marketable securities, exclusively U.S. Treasury securities, the Company utilizes values provided by the Company's investment advisor and compares them to the values published by a third-party source. The Company believes that the carrying amounts of accounts receivable, prepaid expenses, other current assets, accounts payable, and accrued expenses approximate fair value due to the short-term nature of those instruments.

Segment Information

Operating segments are defined as components of an entity about which separate discrete information is available for evaluation by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company's Chief Executive Officer is its chief operating decision-maker and views operations and manages the Company's business in one operating segment operating exclusively in the United States.

Revenue Recognition

Effective January 1, 2018, the Company adopted the provisions of ASC 606 using the full retrospective transition method.

To date all revenue has been generated from the Company's agreements with AbbVie and Janssen, executed in October, 2018 and February 2019, respectively. As a result, there was no impact of the adoption of ASC 606 to the Company's financial statements. Please refer to Note 12 below for details of ASC 606 application to the Company's agreements with AbbVie and Janssen.

The Company first evaluates collaboration arrangements to determine whether the arrangement (or part of the arrangement) represents a collaborative arrangement pursuant to ASC Topic 808, *Collaborative Arrangements*, based on the risks and rewards and activities of the parties pursuant to the contractual arrangement. The Company accounts for any collaborative arrangement or elements within the contract that are deemed to be a collaborative arrangement, and not a customer relationship, in accordance with ASC 808. Through March 31, 2019, the Company entered into two agreements that have been accounted for pursuant to ASC 606.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

Under ASC 606, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. To determine the appropriate amount of revenue to be recognized for arrangements determined to be within the scope of ASC 606, the Company performs the following five steps: (i) identification of the contract(s) with the customer, (ii) identification of the promised goods or services in the contract and determination of whether the promised goods or services are performance obligations, (iii) measurement of the transaction price, (iv) allocation of the transaction price to the performance obligations, and (v) recognition of revenue when (or as) the Company satisfies each performance obligation. The Company only applies the five-step model to contracts when it is probable that the entity will collect consideration it is entitled to in exchange for the goods or services it transfers to the customer.

The Company accounts for a contract with a customer that is within the scope of ASC 606 when all of the following criteria are met: (i) the arrangement has been approved by the parties and the parties are committed to perform their respective obligations, (ii) each party's rights regarding the goods or services to be transferred can be identified, (iii) the payment terms for the goods or services to be transferred can be identified, (iv) the arrangement has commercial substance and (v) collection of substantially all of the consideration to which the Company will be entitled in exchange for the goods or services that will be transferred to the customer is probable.

Performance obligations are promised goods or services in a contract to transfer a distinct good or service to the customer. Promised goods or services are considered distinct when: (i) the customer can benefit from the good or service on its own or together with other readily available resources and (ii) the promised good or service is separately identifiable from other promises in the contract. Options to purchase additional goods or services are considered to be marketing offers and are to be accounted for as separate contracts when the customer elects such options, unless the Company determines the option provides a material right which would not be provided without entering into the contract. If, however, an option is determined to provide a material right that would not be provided without entering into a contract, a portion of the transaction price is allocated to such option.

The Company estimates the transaction price based on the amount of consideration the Company expects to receive for transferring the promised goods or services in the contract. The consideration may include both fixed consideration and variable consideration. At the inception of each arrangement that includes variable consideration, the Company evaluates the amount of the potential payments and the likelihood that the payments will be received. The Company utilizes either the most likely amount method or expected value method to estimate the transaction price based on which method better predicts the amount of consideration expected to be received. If it is probable that a significant revenue reversal would not occur, the variable consideration is included in the transaction price.

The Company also evaluates whether instances in which the timing of payments by customers do not match the timing of performance obligation satisfaction contain an element of financing and adjusts the transaction price for the effect of the financing component, if any.

The Company's transactions with customers may include development and regulatory milestone payments. The Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the Company's control or the customer's control, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. At the end of each reporting period, the Company re-evaluates the probability of achievement of such milestones and any related constraint, and if necessary, adjusts the estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect collaboration revenue and net income (loss) in the period of adjustment.

For sales-based royalties, including milestone payments based on the level of sales, the Company determines whether the sole or predominant item to which the royalties relate is a license. When the license is the sole or predominant item to which the sales-based royalty relates, the Company recognizes revenue at the later of: (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied).

The Company allocates the transaction price based on the estimated standalone selling price of the identified performance obligations. The Company must develop assumptions that require judgment to determine the standalone selling price for each performance obligation identified in the contract. The Company utilizes key assumptions to determine the standalone selling price, which may include other comparable transactions, pricing considered in negotiating the transaction, and the estimated costs. Certain variable consideration is allocated specifically to one or more performance obligations in a contract when the terms of the variable consideration relate to the satisfaction of the performance obligation and the resulting amounts allocated to each performance obligation are consistent with the amounts the Company would expect to receive for each performance obligation.

The Company receives payments from customers based on billing schedules established in each contract. Up-front payments and fees are recorded as deferred revenue upon receipt or when due until the Company performs its obligations under these arrangements. Amounts are recorded as accounts receivable when the Company's right to consideration is unconditional.

Research and Development Expenses

Research and development expenses are expensed as incurred and consist of costs incurred in performing research and development activities, including compensation related expenses for research and development personnel, preclinical and clinical activities including cost of supply, overhead expenses including facilities expenses, materials and supplies, amounts paid to consultants and outside service providers, and depreciation of equipment. Upfront license payments related to acquired technologies which have not yet reached technological feasibility and have no alternative future use are also included in research and development expense.

Research Contract Costs and Accruals

The Company has entered into various research service arrangements under which vendors perform various services. The Company records accrued expenses for estimated costs incurred under the arrangements. When evaluating the adequacy of the accrued expenses, the Company analyzed the progress of the studies, trials or other services performed, including invoices received and contracted costs. Judgments and estimates are made in determining the accrued expense balances at the end of each reporting period.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

Equity-Based Compensation

The Company accounts for equity awards, including common stock, incentive units, and common stock options, granted to employees as equity award compensation in accordance with ASC Topic 718, *Compensation — Stock Compensation* ("ASC 718"). ASC 718 requires all equity-based payments to employees, which includes grants of employee equity awards, to be recognized as expense in the statements of operations based on their grant date fair values. The Company estimates the fair value of common stock and common units using an appropriate valuation methodology, in accordance with the framework of the 2013 American Institute of Certified Public Accountants Technical Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation*. Each valuation methodology includes estimates and assumptions that require the Company's judgment. These estimates and assumptions include a number of objective and subjective factors, including external market conditions, guideline public company information, the prices at which the Company sold convertible preferred units, the superior rights and preferences of securities senior to the Company's common units at the time, and the likelihood of achieving a liquidity event such as an initial public offering or sale. Significant changes to the assumptions used in the valuations could result in different fair values of common units, restricted common stock, and stock options at each valuation date, as applicable.

The fair value of each incentive unit and stock option award is estimated using the Black-Scholes option-pricing model, using inputs which include the fair value of the Company's common stock and certain subjective assumptions, the expected stock price volatility, the expected term of the award, the risk-free rate, and expected dividends. Expected volatility is calculated based on reported volatility data for a representative group of publicly traded companies for which historical information was available. The historical volatility is generally calculated based on a period of time commensurate with the expected term assumptions. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant commensurate with the expected term assumption. The Company uses the simplified method, under which the expected term is presumed to be the midpoint between the vesting date and the end of the contractual term. The Company utilizes this method due to lack of historical exercise data and the plain-vanilla nature of its stock-based awards. The expected dividend yield is assumed to be zero as the Company has never paid dividends and has no current plans to pay any dividends on common stock.

Compensation expense related to equity awards to employees that are subject to graded vesting is recognized on a straight-line basis, based on the grant date fair value, over the requisite service period of the award, which is generally the vesting term. All awards granted to employees and the Board members to date contain only service vesting conditions. The Company recognizes forfeitures when they occur.

For equity awards granted to non-employees, the Company accounts for the related equity award compensation in accordance with the provisions of ASU 2018-07 (codified within ASC 718) and recognizes equity award compensation expense over the related service period of the non-employee award. Equity awards issued to non-employees are recorded at their fair values at the grant date, using the Black-Scholes option-pricing model.

All awards granted to date were equity-classified as of December 31, 2018 and March 31, 2019.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

The Company classifies equity-based compensation expense in its consolidated statements of operations in the same manner in which the award recipient's salary and related costs are classified or in which the award recipient's service payments are classified.

Comprehensive Loss

Comprehensive loss is the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. Comprehensive loss includes net loss and the change in accumulated other comprehensive loss for the period. For the years ended December 31, 2017 and 2018 and three months ended March 31 2018, comprehensive loss equaled net loss. For three months ended March 31, 2019, comprehensive loss included $25,000 of unrealized holding gains on marketable securities.

Net Loss per Share

The Company applies the two-class method to compute basic and diluted net loss per share because it has issued instruments that meet the definition of participating securities. The two-class method determines net income (loss) per share for each class of common and participating securities according to dividends declared or accumulated and participation rights in undistributed earnings. The two-class method requires income (losses) available to common unit holders and common stockholders for the period to be allocated between common and participating securities based upon their respective rights to share in the earnings as if all income (losses) for the period had been distributed. During periods of loss, there is no allocation required under the two-class method since the participating securities do not have a contractual obligation to fund the losses of the Company.

Prior to the Reorganization, the Company calculated basic net loss per unit by dividing net loss by the weighted average number of common units outstanding. Subsequent to the Reorganization, the Company calculates basic net loss per share by dividing net loss by the weighted average number of common shares outstanding, excluding unvested restricted common stock. The Company calculates diluted net loss per unit and diluted net loss per share by dividing net loss by the weighted average number of common units outstanding or weighted average number of common shares outstanding, as applicable, after giving consideration to the dilutive effect of convertible preferred units, convertible preferred stock, incentive units, restricted common stock, warrants, and stock options that are outstanding during the period. The Company has generated a net loss in all periods presented, so the basic and diluted net loss per unit and net loss per share are the same, as the inclusion of the potentially dilutive securities would be anti-dilutive.

Income Taxes

Since inception, the Company recorded income taxes in accordance with FASB Accounting Standards Codification Topic 740, *Income Taxes* ("ASC 740"), which provides for deferred taxes using an asset and liability approach. Under this method, deferred tax assets and liabilities are determined based on temporary differences between the financial statement basis and tax basis of assets and liabilities and net operating loss and credit carryforwards using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Valuation allowances are established when it is more likely than not that some portion of the deferred tax assets will not be realized.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

The Company accounts for uncertainty in income taxes recognized in the financial statements by applying a two-step process to determine the amount of tax benefit to be recognized. First, the tax position must be evaluated to determine the likelihood that it will be sustained upon external examination by the taxing authorities. If the tax position is deemed more-likely-than-not to be sustained, the tax position is then assessed to determine the amount of benefit to recognize in the financial statements. The amount of the benefit that may be recognized is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. At December 31, 2018 and March 31, 2019, the Company had not identified any significant uncertain tax positions.

Prior to the Reorganization, Morphic Holding, LLC elected to be treated under the partnership provisions of the Internal Revenue Service code. Accordingly, all income and deductions of Morphic Therapeutic, LLC were recorded on the members' individual tax returns and no taxes were recorded by Morphic Holding, LLC. The wholly-owned subsidiaries of Morphic Holding, LLC — Morphic Therapeutic, Inc., Lazuli, Inc., Tourmaline, Inc., and Phyllite, Inc. — were taxed as C-corporations for federal income tax purposes and filed separate corporate income tax returns from the LLC entity.

As part of the Reorganization, the parent Company made the election to be treated as C-corporation for federal and state income tax purposes and subsequently legally converted the parent Company to a corporation. Following the Reorganization, the Company has elected to file consolidated tax returns.

The Company is open to examination by the Internal Revenue Service for the tax years ended December 31, 2015 to December 31, 2018. The Company is currently not under examination by the Internal Revenue Service or any other jurisdictions for any tax years. The Company has not recorded any interest or penalties on any unrecognized tax benefits since its inception.

Deferred offering costs

The Company capitalizes certain legal, accounting and other third-party fees that are directly associated with in-process equity financings as deferred offering costs until such financings are consummated. After the consummation of the equity financing, these costs are recorded in stockholders' (deficit) equity as a reduction of additional paid-in capital or the associated preferred stock account, as applicable. In the event the offering is terminated, all capitalized deferred offering costs are expensed. Deferred offering costs as of December 31, 2018 and March 31, 2019 were $0 and $20,000 respectively. Such costs are classified in other current assets in the accompanying consolidated balance sheets.

Pro forma financial information (unaudited)

On April 11, 2019, the Company's board of directors authorized management of the Company to file a registration statement with the Securities and Exchange Commission to sell shares of its common stock to the public. Upon the closing of an initial public offering (as defined in the Company's Certificate of Incorporation), all of the Company's outstanding shares of convertible preferred stock will automatically convert into shares of common stock and the outstanding warrant for the purchase of shares of convertible preferred stock will automatically convert into a warrant for the purchase of shares of common stock. The accompanying unaudited pro forma consolidated balance sheet and consolidated statements of convertible preferred stock and stockholders' (deficit) equity as of March 31, 2019 have been prepared to give effect to (1) the automatic conversion of all outstanding shares of convertible preferred stock into 122,513,962 shares of common stock and (2) the automatic conversion of the outstanding warrant to purchase 39,800

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

shares of convertible preferred stock into a warrant to purchase 39,800 shares of common stock, resulting in the reclassification of the warrant liability to additional paid-in capital, as if the Company's proposed IPO had occurred on March 31, 2019. The shares of common stock issuable and the proceeds expected to be received in the proposed IPO are excluded from such pro forma financial information.

The unaudited pro forma basic and diluted net loss per share in the accompanying consolidated statements of operations and comprehensive loss for the year ended December 31, 2018 and the three months ended March 31, 2019 have been computed to give effect to the automatic conversion of all outstanding shares of convertible preferred stock into shares of common stock and the automatic conversion of the warrant to purchase shares of convertible preferred stock into a warrant to purchase shares of common stock. The unaudited pro forma basic and diluted net loss per share for the year ended December 31, 2018 and the three months ended March 31, 2019 was computed using the weighted average number of shares of common stock outstanding, including the pro forma effect of the conversion of all outstanding shares of convertible preferred stock into shares of common stock, as if the Company's proposed IPO had occurred on the later of January 1, 2019 or the original issuance dates of the convertible preferred units or convertible preferred stock. The unaudited pro forma net loss used in the calculation of unaudited basic and diluted pro forma net loss per share for the year ended December 31, 2018 and the three months ended March 31, 2019 excludes the impact of the change in fair value of the warrant liability that was recorded by the Company during such period. The unaudited pro forma net loss per share does not include the shares expected to be sold or related proceeds to be received in the proposed IPO.

Unaudited Interim Financial Information

The accompanying consolidated balance sheets as of March 31, 2019, the consolidated statements of operations and comprehensive loss and cash flows for the three months ended March 31, 2018 and 2019, and the consolidated statement of convertible preferred stock and stockholders' (deficit) equity for the three months ended March 31, 2019 are unaudited. The unaudited interim financial statements have been prepared on the same basis as the audited annual financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary for the fair presentation of the Company's financial position as of March 31, 2019 and the results of its operations and its cash flows for the three months ended March 31, 2018 and 2019. Financial statement disclosures for the three months ended March 31, 2018 and 2019 are condensed and do not include all disclosures required for an annual set of financial statements in accordance with GAAP. The results for the three months ended March 31, 2019 are not necessarily indicative of results to be expected for the year ended December 31, 2019, any other interim periods, or any futher year or period.

Subsequent Events

The Company considers events or transactions that occur after the balance sheet date but prior to the issuance of the consolidated financial statements for potential recognition or disclosure in the consolidated financial statements. Subsequent events have been evaluated through the date these consolidated financial statements were issued for potential recognition or disclosure in the consolidated financial statements.

Recently Adopted Accounting Pronouncements

In January 2016, the FASB issued ASU 2016-01, Financial Instruments — Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities ("ASU 2016-01), which amended the guidance on the recognition and measurement of financial assets and financial liabilities. The

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

new guidance requires that equity investments (except those accounted for under the equity method of accounting, or those that result in consolidation of the investee) are measured at fair value with changes in fair value recognized in net income. The guidance also requires the use of an exit price when measuring the fair value of financial instruments for disclosure purposes, eliminates the requirement to disclose the methods and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost and requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset. The guidance became effective for the Company for the fiscal year beginning January 1, 2019, including interim periods within that fiscal year. Adoption of ASU 2016-01 did not have a material impact on the Company's consolidated financial statements.

In October 2016, the FASB issued ASU No. 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfer of Assets Other than Inventory* ("ASU 2016-16"), which requires the recognition of the income tax consequences of an intra-entity transfer (sales) of an asset, other than inventory, when the transfer occurs. The Company adopted this standard on January 1, 2018 using the full retrospective approach. Adoption of this standard did not have a material impact on the Company's consolidated financial statements as the Company does not engage in sale transactions with its wholly owned subsidiaries.

In March 2016, the FASB issued ASU No. 2016-09, *Compensation — Stock Compensation ("Topic 718"): Improvements to Employee Share-Based Payment Accounting* ("ASU 2016-09"). The new standard involves several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities and classification on the statement of cash flows, and making an accounting policy election regarding accounting for forfeitures. The Company adopted ASU 2016-09 on January 1, 2018 using the full retroactive approach. The adoption of ASU 2016-09 did not have a material impact on the Company's consolidated financial statements.

In November 2015, the FASB issued ASU No. 2015-17, *Balance Sheet Classification of Deferred Taxes* ("ASU 2015-17"), which requires deferred tax liabilities and assets to be classified as noncurrent in the consolidated balance sheet. The Company adopted this guidance on January 1, 2018 using the full retroactive approach by classifying all previously recognized deferred tax assets and liabilities as noncurrent. The adoption of ASU 2015-17 did not have a material impact on the Company's consolidated financial statements as the Company recorded a full valuation allowance on deferred tax assets in all periods.

In November 2016, the FASB issued Accounting Standards Update No. 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash* ("ASU 2016-18"), which requires companies to include amounts generally described as restricted cash and restricted cash equivalents in cash and cash equivalents when reconciling beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The Company adopted ASU 2016-18 on January 1, 2018 using the full retrospective method. The Company reflected the effect of adoption of ASU 2016-18 by the conforming presentation of changes in cash and cash equivalents, including the restricted cash as of December 31, 2017 and 2018 in its statement of cash flows.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): *Classification of Certain Cash Receipts and Cash Payments* ("ASU 2016-15") to clarify guidance on the classification of certain cash receipts and payments in the statement of cash flows. The Company adopted ASU 2016-15 on January 1, 2018 using full retrospective method. The adoption of ASU 2016-15 did not have a material impact on the consolidated financial statements.

In May 2017, the FASB issued ASU 2017-09, *Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting,* ("ASU 2017-09") which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. The new standard does not change the accounting for modifications but clarifies that modification accounting guidance should only be applied if the fair value, vesting conditions, or classification of the award changes as a result of the change in terms or conditions. The Company adopted ASU 2017-09 on January 1, 2018 using the prospective approach. Initial adoption of ASU 2017-09 did not have any impact on the Company's consolidated financial statements. In October 2018, in connection with the Reorganization described in Note 8, the Company modified certain equity-based awards and the effect of such modification has been reflected in the consolidated financial statements for the year ended December 31, 2018.

In May 2014, the FASB issued Accounting Standards Update ("ASU") No. 2014-09, *Revenue from Contracts with Customers (Topic 606)* ("ASU 2014-09"), which modifies how all entities recognize revenue, and consolidates into one ASC (ASC Topic 606, *Revenue from Contracts with Customers*) the current guidance found in ASC Topic 605, and various other revenue accounting standards for specialized transactions and industries. ASU 2014-09 outlines a comprehensive five-step revenue recognition model based on the principle that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. On January 1, 2018, the Company elected to early adopt ASU 2014-09 using the full retrospective approach. The statement of operations and comprehensive loss for years ended December 31, 2017 and 2018 is presented in accordance with the provisions of ASC 606.

In June 2018, the FASB issued ASU 2018-07, *Compensation — Stock Compensation (Topic 718) — Improvements to Nonemployee Share-Based Payment Accounting* that largely aligns the accounting for share-based payment awards issued to employees and nonemployees, with certain exceptions. The new guidance expands the scope of Accounting Standards Codification (ASC) 718 to include share-based payments granted to nonemployees in exchange for goods or services used or consumed in an entity's own operations and supersedes the guidance in ASC 505-30. Under the guidance, the measurement of equity-classified nonemployee awards will be fixed at the grant date, which may lower their cost and reduce volatility in the income statement. The Company adopted ASU 2018-07 on January 1, 2018 using the modified retroactive approach. The Company's awards to nonemployees were immaterial as of the date of adoption.

Recently Issued Accounting Pronouncements not yet Adopted

In November 2018, the FASB issued Accounting Standards Update 2018-18 ("ASU 2018-18"), *Collaborative Arrangements (topic 808): Clarifying the Interaction between Topic 808 and Topic 606*. ASU 2018-18 clarifies that certain transactions between participants in a collaborative arrangement should be accounted for under ASC 606 when the counterparty is a customer. The guidance precludes an entity from

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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2. Summary of Significant Accounting Policies (Continued)

presenting consideration from a transaction in a collaborative arrangement as revenue from contracts with customers if the counterparty is not a customer for that transaction. The guidance amends ASC 808 to refer to the unit-of-account guidance in ASC 606 and requires it to be used only when assessing whether a transaction is in the scope of ASC 606. The guidance will be effective for the Company for fiscal years beginning after December 15, 2020 and interim periods within fiscal years beginning after December 15, 2021 and has to be adopted using retrospective approach. The Company is currently evaluating the impact of ASU 2018-18 on the consolidated financial statements.

In August 2018, the FASB issued Accounting Standards Update 2018-15 ("ASU 2018-15), *Intangibles — Goodwill and Other — Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* requiring a customer in a cloud computing arrangement that is a service contract to follow the internal use software guidance in Accounting Standards Codification (ASC) 350-402 to determine which implementation costs to capitalize as assets. The guidance is effective for the Company in annual periods beginning after December 15, 2020, and interim periods in 2021. The Company has the option to apply the guidance prospectively to all implementation costs incurred after the date of adoption or retrospectively in accordance with ASC 250-10-45-5 through ASC 250-10-45-10. The new guidance requires certain disclosures in the interim and annual period of adoption. The Company does not expect the adoption of this guidance to have a material impact on the consolidated financial statements due to limited use in its operations of cloud computing arrangements that are service contracts requiring integration.

In August 2018, the FASB issued Accounting Standards Update 2018-13 ("ASU 2018-13"), *Fair Value Measurement (Topic 820): Disclosure Framework — Changes to the Disclosure Requirements for Fair Value Measurement*, removing the requirements to disclose:

- The amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy
- The policy for timing of transfers between levels
- The valuation processes for Level 3 fair value measurements

and clarifying certain aspects of disclosures regarding uncertainty in measurement of the reporting date. The guidance is effective for the Company in annual periods beginning after December 15, 2019, and interim periods within those annual periods and has to be adopted using retrospective approach. The Company does not expect the adoption of this guidance to have a material impact on the consolidated financial statements as the Company does not currently have and does not anticipate, based on its conservative investment policy and nature of operations, to have material assets or liabilities balances transferring between Level 1 and Level 2 or falling within Level 3 of the fair value hierarchy.

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)* ("ASU 2016-02"), which requires a lessee to recognize most leases on the balance sheet but recognize expenses on the income statement in a manner similar to current practice. The update states that a lessee will recognize a lease liability for the obligation to make lease payments and a right-to-use asset for the right to use the underlying assets for the lease term. Leases will continue to be classified as either financing or operating, with classification affecting the recognition, measurement, and presentation of expenses and cash flows arising from a lease. The standard, and amendments by additional issued guidance described below, will be effective for the Company for interim and annual periods beginning on or after January 1, 2020, with early

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

2. Summary of Significant Accounting Policies (Continued)

adoption permitted. ASU 2016-02 initially required Topic 842 be adopted on a modified retrospective transition approach for leases existing, or entered into, after the beginning of the earliest comparative period presented in the financial statements. In July 2018, the FASB issued Accounting Standards Update 2018-11 ("ASU 2018-11"), Leases (Topic 842) — *Targeted Improvements.* In ASU 2018-11, the Board provided another transition method by allowing entities to initially apply the new leases standard at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption consistent with preparers' requests. Additionally, in July 2018, the FASB issued Accounting Standards Update 2018-10 ("ASU 2018-10") *Codification Improvements to Topic 842, Leases.* ASU 2018-10 provides a number of improvements and clarifications to the guidance of ASC 842. The Company is currently evaluating the impact that the adoption of Topic 842 will have on its consolidated financial statements, the impact of ASU 2018-10, and whether to adopt the guidance in ASU 2018-11 or follow other acceptable method on transitioning to the guidance of Topic 842.

In June 2016, the FASB issued ASU 2016-13, Financial Instruments Credit Losses (Topic 326) ("ASU 2016-13"), which requires consideration of a broader range of reasonable and supportable information to developing credit loss estimates. The guidance is effective for the fiscal year beginning January 1, 2020, including interim periods within that fiscal year and has to be adopted using modified-retrospective approach. The Company is currently evaluating the impact of ASU 2016-13 on its consolidated financial statements.

The Company has considered other recent accounting pronouncements and concluded that they are either not applicable to the business, or that the effect is not expected to be material to the consolidated financial statements as a result of future adoption.

3. Fair Value of Financial Assets and Liabilities

The following tables summarize the assets and liabilities measured at fair value on a recurring basis at December 31, 2017 and 2018 and March 31, 2019 (in thousands):

	Fair Value Measurements at December 31, 2017			
	Total	Level 1	Level 2	Level 3
Assets:				
Money market funds, included in cash and cash equivalents	$ 20,461	$ 20,461	$ —	$ —
Total assets	$ 20,461	$ 20,461	$ —	$ —

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

3. Fair Value of Financial Assets and Liabilities (Continued)

	Fair Value Measurements at December 31, 2018			
	Total	Level 1	Level 2	Level 3
Assets:				
Money market funds, included in cash and cash equivalents	$ 185,676	$ 185,676	$ —	$ —
Total assets	$ 185,676	$ 185,676	$ —	$ —

	Fair Value Measurements at March 31, 2019			
	Total	Level 1	Level 2	Level 3
		(unaudited)		
Assets:				
Money market funds, included in cash and cash equivalents	$ 42,201	$ 42,201	$ —	$ —
U.S. Treasury securities	143,651	—	143,651	—
Total assets	$ 185,852	$ 42,201	$ 143,651	$ —

The money market funds included in the table above invest in U.S. government securities that are valued using quoted market prices. Accordingly, money market funds are categorized as Level 1 as of December 31, 2017 and 2018 and March 31, 2019. The fair value of the Company's U.S. Treasury securities as of March 31, 2019 was determined using Level 2 inputs. The warrant to purchase convertible preferred shares is classified as a liability within Level 3 of the fair value hierarchy and is valued using the Black-Scholes option pricing model. The change in value of the warrant was immaterial for the years ended December 31, 2017 and 2018 and three months ended March 31, 2019.

No amounts were transferred between level 1 and level 2 of the fair value hierarchy in any periods presented.

4. Marketable securities

As of March 31, 2019, the Company has the following investments in marketable securities classified as available-for-sale (in thousands)(unaudited):

	Maturity	Amortized cost	Gross unrealized holding gains	Gross unrealized holding losses	Aggregate estimated fair value
U.S. Treasury securities	less than 1 year	$ 143,626	$ 26	$ (1)	$ 143,651

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

4. Marketable securities (Continued)

The Company did not have any investments in marketable securities at December 31, 2018 or in prior periods.

All of the Company's investments are classified as available-for-sale and are carried at fair value with unrealized gains and losses recorded as a component of accumulated other comprehensive income (loss), net of related income taxes. The Company recognized in accumulated other comprehensive income $25,000 in net unrealized holding gains related to changes in the securities' fair values, impacted by interest rates fluctuations. As of March 31, 2019, the aggregate fair value of two securities in an unrealized loss position was $17.9 million and the aggregate unrealized losses were $1,000. No securities have been in an unrealized loss position for more than one year. As of March 31, 2019, no securities are considered to be other than temporarily impaired because the impairments are not severe, have been for a short duration, and are due to normal market and interest rate fluctuations. Furthermore, the Company does not intend to sell the investment securities in an unrealized loss position and it is not more likely than not that the Company will be required to sell these securities before the recovery of the value.

5. Property and Equipment, Net

At December 31, 2017 and 2018 and March 31, 2019, property and equipment, net consists of the following (in thousands):

	As of December 31,		As of
	2017	2018	March 31, 2019 (unaudited)
Laboratory equipment	$ 1,779	$ 2,415	$ 2,971
Computers and software	152	163	163
Leasehold improvements	465	475	475
	2,396	3,053	3,609
Less: Accumulated depreciation and amortization	(671)	(1,210)	(1,376)
	$ 1,725	$ 1,843	$ 2,233

Depreciation and amortization expense was $434,000 and $539,000 for the years ended December 31, 2017 and 2018, respectively, and $127,000 and $166,000 for the three months ended March 31, 2018 and 2019, respectively.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

6. Accrued Expenses

At December 31, 2017 and 2018 and March 31, 2019, accrued expenses consist of the following (in thousands):

	As of December 31, 2017	2018	As of March 31, 2019 (unaudited)
Accrued payroll and related expenses	$ 974	$ 2,012	$ 616
Accrued research and development costs	322	715	2,324
Miscellaneous accrued expenses	—	512	523
	$ 1,296	$ 3,239	$ 3,463

7. Stockholders' Equity

Prior to the Reorganization, all interests of members in distributions and other amounts were represented by their units of membership in the Company as specified in its operating agreement. There were two classes of units: capital units and incentive units. Capital units were comprised of common units and convertible preferred units, which represent a capital interest in the Company, while incentive units represent profits interests within the meaning of IRS Revenue Procedures 93-27 and 2001-43. The various classes of capital units are described below.

Convertible Preferred Units

As of December 31, 2017, the total authorized capital units of the Company were 138,035,280 units, which consisted of 77,000,000 Common Units and 61,035,280 Preferred Units, of which 11,987,661 were designated Series Seed Preferred Units and 49,047,619 were designated Series A Preferred Units. During 2018, 61,538,454 units were designated Series B Preferred Units. Issuance of Series Seed Preferred Units, Series A Preferred Units, and Series B Preferred Units (collectively the "Preferred Units") is described below.

In June 2015 and January 2016, the Company issued Series Seed Preferred Units at $0.75286 per unit for proceeds of $6,555,746, net of issuance costs of $44,254. In June 2015, the Company issued additional Preferred Series Seed Units at $0.75286 per unit valued at $2,380,000 in exchange for external research efforts, with certain units subject to clawback for failure of the third party to provide the external research services through April 2017. As of December 31, 2017, there was no remaining clawback on Series Seed Preferred Units.

In June 2016, the Company issued Series A Preferred Units at $1.05 per unit for proceeds of $20,435,269, net of issuance costs of $164,730. In October 2017, the Company achieved a research milestone and issued the first tranche of the Series A Preferred Units at $1.05 per unit for proceeds of $20,594,107, net of issuance costs of $5,894.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

7. Stockholders' Equity (Continued)

In August 2018, in accordance with the terms of the Series A Preferred Unit Purchase Agreement, the Company issued additional Series A Preferred Units to the Series A Investors for proceeds of $10,290,962, net of issuance costs of $9,038.

In September 2018, the Company issued Series B Preferred Units at $1.30 per unit for proceeds of $79,831,491, net of issuance costs of $168,499.

The Company amended rights, preferences, and privileges of the Series Seed Preferred Units with the issuance of the Series A Preferred Units in June 2016 and accounted for it as a modification of the Series Seed Preferred Units due to the lack of significance of the modifications to the substantive contractual terms of the Series Seed Preferred Units. The Company amended rights, preferences, and privileges of the Series Seed and Series A Preferred Units with the issuance of the Series B Preferred Units in September 2018 and accounted for it as a modification of the Series Seed and Series A Preferred Units due to the lack of significance of the modifications to the substantive contractual terms of the Series Seed and Series A Preferred Units.

The rights of each class of preferred and common units is presented below:

Conversion

The Preferred Units are convertible at any time, at the election of each holder thereof, into Common Units at a one-for-one ratio, which ratio may be adjusted for certain dilutive issuances of additional units.

Liquidation Preference

In the event of a liquidation, including deemed liquidation or dissolution of the Company, distributions shall be made in the following order and priority:

- First, 100% to the members holding outstanding Series B Preferred Units, if any, in an amount equal to the aggregate original issue price less distributions previously paid to such holders;
- Second, 100% to the members holding outstanding Series A Preferred Units, if any, in an amount equal to the aggregate original issue price less distributions previously paid to such holders;
- Third, 100% to the members holding outstanding Series Seed Preferred Units, if any, in an amount equal to the aggregate original issue price less distributions previously paid to such holders; and
- Fourth, after payment in full to the holders of outstanding Preferred Units, 100% to the members holding outstanding common units and preferred units, in proportion to the respective number of outstanding common units (determined on an as-converted basis) held by such member.

No holder of an incentive unit shall participate in any distributions until the cumulative amount distributed to common unit holders exceeds the threshold amount with respect to such incentive unit.

A deemed liquidation event is defined as a merger or consolidation (unless the units outstanding prior to the transaction represent a majority of the post transaction voting rights) or the sale or transfer of substantially all of the assets of the Company, unless the holders of a majority of the then outstanding preferred units, voting together, including at least (i) a majority of the Series A Preferred Units and (ii) 63% of the Series B Preferred Units elect otherwise.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

7. Stockholders' Equity (Continued)

Voting Rights

An affirmative vote of a majority of the outstanding Preferred Units and Common Units, voting together as a single class on an as converted basis, is required on all matters.

Deemed Redemption

The Company's Convertible Preferred Units have been classified as temporary equity on the accompanying consolidated balance sheets in accordance with authoritative guidance for the classification and measurement of redeemable securities as the Convertible Preferred Units are redeemable upon the occurrence of a deemed liquidation event. The carrying value of the Company's Convertible Preferred Units was not adjusted because a liquidation event was not probable and did not occur.

Upon issuance, and amendment, of each class of Preferred Unit, the Company assessed the features of the Preferred Unit, including additional issuances, embedded conversion and liquidation features and determined that such features did not require the Company to separately account for these features. The Company also concluded that no beneficial conversion feature existed upon the issuance date of each class of Preferred Units.

Common Units

As of December 31, 2016, the Company had outstanding 5,896,584 common units. There were no additional common units issued during the years ended December 31, 2017 and 2018 and three months ended March 31, 2019.

An affirmative vote of a majority of the outstanding Preferred Units and Common Units, voting together as a single class on an as converted basis, is required on all matters.

Reorganization and Convertible Preferred Stock

On December 5, 2018, the Company completed a series of transactions, or the Reorganization, pursuant to which Morphic Holding, LLC was converted in a tax-free exchange into Morphic Holding, Inc. and three subsidiaries, namely Lazuli, Inc., Tourmaline, Inc. and Phyllite, Inc. were merged with and into Morphic Therapeutic, Inc. In connection with the Reorganization:

- Holders of Morphic Holding, LLC Series B convertible preferred units received one share of Morphic Holding, Inc. Series B convertible preferred stock for each outstanding Series B convertible preferred unit held immediately prior to the Reorganization, with an aggregate of 61,538,454 shares of Morphic Holding, Inc. Series B convertible preferred stock issued in the Reorganization;
- Holders of Morphic Holding, LLC Series A convertible preferred units received one share of Morphic Holding, Inc. Series A convertible preferred stock for each outstanding Series A convertible preferred unit held immediately prior to the Reorganization, with an aggregate of 49,047,619 shares of Morphic Holding, Inc. Series A convertible preferred stock issued in the Reorganization;
- Holders of Morphic Holding, LLC Series Seed convertible preferred units received one share of Morphic Holding, Inc. Series Seed convertible preferred stock for each outstanding Series Seed convertible preferred unit held immediately prior to the Reorganization, with an aggregate of 11,927,889 shares of Morphic Holding, Inc. Series Seed convertible preferred stock issued in the Reorganization;

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

7. Stockholders' Equity (Continued)

- Holders of Morphic Holding, LLC common units received one share of Morphic Holding, Inc. common stock for each outstanding common unit held immediately prior to the Reorganization, with an aggregate of 5,896,584 shares of common stock issued in the Reorganization;

- Holders of Morphic Holding, LLC vested and unvested incentive units, exchanged one incentive unit for one share of common stock or restricted common stock, respectively. Threshold amounts on all vested and unvested incentive units were decreased to $0. The restricted common stock was issued with the same vesting terms as the unvested incentive units held immediately prior to the Reorganization. A total of 9,182,834 shares of common stock and restricted common stock were issued to the prior holders of incentive units; and

- The outstanding warrant to purchase 39,800 Series Seed convertible preferred units at an exercise price of $0.75286 per unit was converted to a warrant to purchase 39,800 shares of Series Seed convertible preferred stock at the same exercise price per share.

The Company's Series B convertible preferred stock, Series A convertible preferred stock, Series Seed convertible preferred stock are designated as convertible preferred stock under the amended and restated certificate of incorporation. All outstanding shares of convertible preferred stock are convertible into shares of common stock at a one-to-one conversion ratio. The purpose of the Reorganization was to reorganize the Company's corporate structure so that Morphic Holding, Inc. would continue as a corporation and so that the Company's existing investors would own capital stock rather than equity interests in a limited liability company.

The Company evaluated the accounting for the Reorganization and specifically the exchange of (1) preferred and common units for preferred and common shares and (2) the modification to the terms of the incentive units. With respect to the exchange of preferred and common units for preferred and common shares, the Company considered that there were no changes to the ownership interest held by each unit/stockholder as a result of the Reorganization, there was no consideration exchanged to effect the exchange, and the significant terms of the preferred units and common units were substantially the same before and after the Reorganization. Based on these considerations, the Company determined that the exchange of shares occurring in the Reorganization should be accounted for as a modification of equity securities. The accounting for the modification to the terms of the incentive units is described in Note 8.

Convertible Preferred Stock

The terms of the Convertible Preferred Stock, and Common Stock after Reorganization, are as follows:

Liquidation

In the event of any liquidation, dissolution or winding up of affairs of the Company (or upon a deemed liquidation event), distributions are first made to holders of the Series B Convertible Preferred Stock equal to the greater of (i) their original issuance price, plus any declared but unpaid dividends or (ii) the amount that the holder would be entitled upon conversion into common stock. The original issue price of Series B Convertible Preferred Stock is $1.30 per share. After distribution to the Series B Convertible Preferred Stockholders, distributions are made to holders of the Series A Convertible Preferred Stock equal to the greater of (i) their original issue price plus any declared but unpaid dividends or (ii) the amount that the holder would be entitled upon conversion into common stock. The original issue price of the Series A Convertible Preferred Stock is $1.05. After distribution to the Series A Convertible Preferred Stockholders,

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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7. Stockholders' Equity (Continued)

the holders of the Series Seed Convertible Preferred Stock, as a class, will receive a distribution equal to the greater of (i) their original issue price plus any declared but unpaid dividends or (ii) the amount that the holder would be entitled upon conversion into common stock. The original issue price of the Series Seed Convertible Preferred Stock is $0.75286. Upon completion of the preferential payments to holders of Convertible Preferred Stock, all of the remaining assets shall be distributed among the holders of common stock on a pro rata basis, calculated based on the number of shares of common stock held by each, assuming conversion of all outstanding shares of Convertible Preferred Stock.

A deemed liquidation event is defined as a merger (unless the shares of capital stock prior to the transaction represent a majority of the post merger voting rights) or the sale, lease, transfer or license of substantially all of the assets of the Company unless the holders of a majority of the then outstanding shares of preferred stock, voting together, including at least (i) a majority of the Series A Convertible Preferred Stock and (ii) 63% of the Series B Convertible Preferred Stock elect otherwise.

Dividends

The Company shall not declare, pay or set aside any dividends on shares of common stock unless the holders of preferred stock then outstanding shall first receive a dividend on each outstanding share of preferred stock.

Conversion

Shares of Convertible Preferred Stock may be converted, at the option of the holder, at any time into a number of common shares as is determined by dividing the original issue price by the conversion price in effect at the time of conversion. The conversion price is equal to the original issue price for all Convertible Preferred Stock, subject to adjustments in the event of any stock dividend, stock split, combination or other similar recapitalization, and other adjustments as set forth in the Company's certificate of incorporation.

In addition, upon either the closing of a firm-commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, or the occurrence of an event, specified by vote of a majority of the then outstanding shares of preferred stock, voting together, including at least (i) a majority of the Series A Convertible Preferred Stock and (ii) 63% of the Series B Convertible Preferred Stock, all outstanding Convertible Preferred Stock will be automatically converted into common shares.

Voting

On any matter to be approved by the stockholders, holders of Convertible Preferred Stock have the right to cast a number of votes equal to the number of shares of common stock into which the shares of Convertible Preferred Stock held by such holder convert.

Redemption

The Company's Convertible Preferred Stock has been classified as temporary equity on the accompanying consolidated balance sheets in accordance with authoritative guidance for the classification and measurement of redeemable securities as the Convertible Preferred Stock is redeemable upon the occurrence of a deemed liquidation event. The carrying value of the Company's Convertible Preferred Stock is not being adjusted because a deemed liquidation event is not probable.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

7. Stockholders' Equity (Continued)

Upon issuance, and amendment, if any, of each class of Preferred Shares, the Company assessed the features of the Preferred Shares, including additional issuances, embedded conversion and liquidation features and determined that such features did not require the Company to separately account for these features. The Company also concluded that no beneficial conversion feature existed upon the issuance date of each class of Preferred Stock.

Common Stock

The voting, dividend, and liquidation rights of the holders of common stock are subject to and qualified by the rights, powers, and preferences of the holders of Convertible Preferred Stock. The common stock has the following characteristics:

Voting

The holders of common stock are entitled to one vote for each share of common stock held.

Dividends

The holders of shares of Common stock are entitled to receive dividends, if and when declared by the Company's board of directors. Cash dividends may not be declared or paid to holders of shares of common stock until all unpaid dividends on Convertible Preferred Stock have been paid in accordance with their terms. No dividends have been declared or paid by the Company to the holders of common stock since the issuance of the common stock.

Liquidation

Holders of the common shares are entitled to receive distributions of cash, including in the event of a liquidation or dissolution of the Company, which preference is junior to the liquidation preference of the Series B Preferred stock holders, Series A Preferred stock holders, and the Series Seed Preferred stock holders. After all preferred stock holders have received their respective preferred distributions, any assets remaining for distribution shall be distributed to the holders of Preferred or common shares determined on an as-converted basis.

Shares Reserved For Future Issuance

As of December 31, 2018 and March 31, 2019, the Company had reserved common shares for the conversion of outstanding Convertible Preferred Stock and for future issuance under the 2018 Stock Option and Incentive Plan as follows:

Common shares reserved for conversion of convertible preferred stock outstanding	122,513,962
Common shares reserved for conversion of convertible preferred shares issuable upon exercise of a warrant	39,800
Common shares reserved for exercise of outstanding stock options under the 2018 Plan	10,417,696
Common shares reserved for future issuance under the 2018 Plan	2,667,369
	135,638,827

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

8. Equity-Based Compensation

Prior to the Reorganization, the Company's operating agreement, as amended and restated, provided for the granting of incentive units to employees, officers, directors, and consultants, as determined by the Board of Directors. At December 31, 2017, 9,253,416 incentive units were authorized to be granted of which 319,360 were available for the future grants.

The terms of the incentive units granted prior to the Reorganization were determined by the Board of Directors and included vesting, forfeiture, repurchase, and other provisions. Incentive units had rights to dividends and were entitled to distributions. Incentive unit holders were not required to purchase or "exercise" their incentive units in order to receive such distributions. However, distributions to incentive unit holders began only after the cumulative amount distributed to common unit holders exceeded the threshold amount with respect to such incentive unit. Distributions were entitled to be made to incentive unit holders whether vested or unvested. Unvested distributions were to be held by the Company until the incentive units vest, at which time they would be released to the incentive unit holder. Unless otherwise approved by the Board of Directors, the incentive units generally vested over a four year period with the first 25% vesting following 12 months of employment or service and the remaining incentive units vesting in equal quarterly installments over the following 36 months. The incentive units had no contractual term.

In connection with the issuance of each incentive unit, the Board of Directors set a threshold amount based on the amount of distributions that the holders of a common unit would be entitled to receive in a hypothetical liquidation of the Company on the date of issuance of the incentive unit in which the Company sold its assets at fair market value, satisfied its liabilities, and distributed the net proceeds to the holders of units in liquidation of the Company.

A summary of the Company's incentive unit activity in 2018 prior to the Reorganization and related information is as follows:

	Number of Units	Weighted Average Grant Date Fair Value per Unit	Weighted Average Threshold Price per Unit
Outstanding at December 31, 2017	8,934,056	$ 0.23	$ 0.19
Granted	354,000	0.41	0.33
Forfeited	(105,222)	0.32	0.27
Exchanged for common stock and restricted common stock pursuant to the Reorganization	(9,182,834)	0.24	0.20
Outstanding at December 31, 2018	—	—	—

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

8. Equity-Based Compensation (Continued)

A summary of vested incentive units is as follows:

	Number of Units
Vested at December 31, 2017	2,561,790
Vesting through the date of the Reorganization	2,045,082
Cancelled/Forfeited	—
Vested as of the Reorganization	4,606,872

The total fair value of incentive units vested during 2017 and 2018 through the date of the Reorganization was $296,000 and $473,000, respectively. During the three months ended March 31, 2018, 538,322 incentive units vested and the Company recognized the corresponding stock-based compensation expense of $123,000.

Reorganization

Pursuant to the Reorganization, all vested and unvested incentive units granted under the 2015 Compensatory Benefit Plan which were outstanding immediately prior to the Reorganization, were exchanged for an equal number of shares of common stock or restricted common stock, respectively, under the 2018 Stock Incentive Plan, described below. The threshold amount per incentive unit was decreased to $0 for all vested and unvested units outstanding immediately prior to the Reorganization. A total of 35 active employees of the Company were subject to the exchange of the incentive units for common shares and restricted common shares. The restricted common stock was issued with the same vesting terms as the unvested incentive units held immediately prior to the Reorganization.

The Company accounted for the exchange of incentive units in Morphic Holding, LLC for common stock and restricted common stock of Morphic Therapeutic, Inc. as a modification in accordance with the requirements of ASC 718. The Company determined the fair value of the common stock and restricted common stock using the market approach, including the guideline public company method and the precedent transaction method which "backsolves" to a preferred price. Accordingly, the Company determined there was an excess fair value of the replacement awards over the fair value of the incentive units exchanged in connection with the Reorganization, which resulted in incremental compensation expense. The incremental fair value related to vested awards was recognized immediately as compensation expense. The incremental fair value of unvested awards and any remaining unrecognized compensation of the original awards will be recognized as compensation expense over the remaining vesting period. The incremental expense resulting from modification of awards totaled $968,000 of which $365,000, was recognized in 2018 and $74,000 was recognized during three months ended March 31, 2019.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

8. Equity-Based Compensation (Continued)

Incentive Unit Compensation Expense Assumptions

The following weighted average assumptions were used in determining the fair value of incentive units granted to both employees and non-employees during 2017 and 2018:

	2017	2018
Risk-free interest rate	2.28%	2.79%
Expected dividend yield	—	—
Expected term (years to liquidity)	6.03	5.98
Expected volatility	70.77%	76.63%

Compensation Expense related to Incentive Units

The Company recorded equity-based compensation expense for incentive units granted to employees, directors and non-employees of $289,000 and $507,000 for the years ended December 31, 2017 and 2018, respectively.

2018 Stock Incentive Plan

The 2018 Stock Incentive Plan (the "2018 Plan"), instituted as part of the Reorganization, provides for the grant of incentive stock options, non-qualified stock options, and restricted stock awards. The 2018 Plan is administered by the Board of Directors, or at the discretion of the Board of Directors, by a committee of the board. The exercise prices, vesting, and other restrictions are determined at the discretion of the Board of Directors, or a committee if so delegated, except that the exercise price per share of stock options may not be less than 100% of the fair market value of the share of common stock on the date of grant and the term of stock option may not be greater than ten years. Stock options granted under the 2018 Plan to employees generally vest over four years. The number of shares initially reserved for issuance under the 2018 Plan was 13,045,265 shares of common stock. The shares of common stock underlying any awards that are forfeited, cancelled, repurchased, or are otherwise terminated by the Company under the 2018 Plan will be added back to the shares of common stock available for issuance under the 2018 Plan up to the number of shares of common stock subject to awards granted prior to the effectiveness of the 2018 Plan. Options generally vest over a four year period with the first 25% vesting following 12 months of employment or service and the remaining award vesting in equal quarterly installments over the following 36 months. All options have a contractual term of 10 years.

As of December 31, 2018 and March 31, 2019, there were 2,667,369 available for future issuance under the 2018 Plan.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

8. Equity-Based Compensation (Continued)

The following table summarizes the common stock and restricted common stock issued as part of the Reorganization and restricted common stock activity under the 2018 Plan from the Reorganization to December 31, 2018:

	Number of Shares	Weighted Average Fair Value per Share at Issuance
Common stock and restricted common stock issued as part of the Reorganization	9,182,834	$ 0.74
Vested as of the Reorganization	4,606,872	0.74
Unvested restricted common stock as of the Reorganization	4,575,962	0.74
Granted	—	—
Vested	184,529	0.74
Forfeited	—	—
Unvested restricted common stock as of December 31, 2018	4,391,433	$ 0.74

As of December 31, 2018, the Company had unrecognized equity-based compensation expense of $1,775,000, which includes $603,000 related to the modification described above, for the restriced common shares issued to employees and non-employees, which is expected to be recognized over a weighted average period of 1.73 years. The aggregate fair value of restricted stock awards that vested subsequent to the Reorganization during the year ended December 31, 2018, based on estimated fair values of stock underlying the restricted stock awards on the date of vesting was $137,000.

The following table summarizes the restricted common stock activity under the 2018 Plan during three months ended March 31, 2019:

	Number of Shares	Weighted Average Fair Value per Share at Issuance
Unvested restricted common stock as of December 31, 2018	4,391,433	$ 0.74
Granted	—	—
Vested	(582,596)	0.74
Forfeited	—	—
Unvested restricted common stock as of March 31, 2019	3,808,837	$ 0.74

As of March 31, 2019, the Company had unrecognized equity-based compensation expense of $1,588,000, which includes $529,000 related to the modification described above, for the restricted common shares

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

8. Equity-Based Compensation (Continued)

issued to employees and non-employees, which is expected to be recognized over a weighted average period of 1.5 years. The Company recognized equity-based expense for the restricted common stock of $187,000 during the three months ended March 31, 2019.

Stock Options

The Company granted stock option awards under the 2018 Plan. The following table summarizes the Company's stock option activity under the 2018 Plan during the year ended December 31, 2018:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value
			(in years)	(in thousands)
Outstanding as of December 31, 2017	—	$ —	—	$ —
Granted	10,417,696	0.74	9.96	—
Vested	—	—	—	—
Forfeited	—	—	—	—
Outstanding as of December 31, 2018	10,417,696	0.74	9.96	—
Options exercisable as of December 31, 2018	—	$ —	—	$ —

The weighted average grant-date fair value per share of stock options granted to employees and non-employees for stock option awards with service-based vesting conditions through December 31, 2018 was $0.50 per share.

The following table summarizes assumptions used in determining the fair value of the options granted in 2018:

	Year ended December 31, 2018
Risk-free interest rate	2.75%
Expected dividend yield	—%
Expected term (in years)	6.03
Expected volatility	75.33%

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

8. Equity-Based Compensation (Continued)

The following table summarizes the Company's stock option activity under the 2018 Plan during three months ended March 31, 2019:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value
			(in years)	(in thousands)
		(unaudited)		
Outstanding as of December 31, 2018	10,417,696	$ 0.74	9.96	$ —
Granted	—			—
Vested	(500,117)	0.74	—	—
Forfeited	—	—	—	—
Outstanding as of March 31, 2019	9,917,579	0.74	9.71	5,851
Options exercisable as of March 31, 2019	500,117	$ 0.74	—	$ 295

Compensation Expense related to Stock Options

The Company recorded equity-based compensation expense for stock options granted to employees and non-employees of $104,000 and $312,000 for the year ended December 31, 2018 and three months ended March 31, 2019, respectively, with no comparable amount in the year ended December 31, 2017 or three months ended March 31, 2018.

As of December 31, 2018 and March 31, 2019, the Company had unrecognized equity-based compensation expense of $5.1 million and $4.8 million, respectively, related to stock options issued to employees and non-employees, which is expected to be recognized over a weighted average period of 3.8 years and 3.6 years, respectively.

Total Equity-based Compensation Expense

The Company recorded equity-based compensation expense related to all equity-based awards for employees and non-employees, which was allocated as follows in the consolidated statements of operations (in thousands):

	Year Ended December 31,		Three Months Ended March 31,	
	2017	2018	2018	2019
			(unaudited)	
Research and development expense	$ 123	$ 520	$ 69	$ 282
General and administrative expense	166	477	54	217
	$ 289	$ 997	$ 123	$ 499

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

9. Income Taxes

The effective income tax rate differed from the amount computed by applying the federal statutory rate to the Company's loss before income taxes as follows:

	Year Ended December 31,	
	2017	2018
Tax effected at statutory rate	34.00%	21.00%
State taxes	6.53	2.89
Stock compensation	(0.58)	(0.84)
Non-taxable income	0.38	0.29
Non deductible expenses	(0.14)	—
Impact of federal rate change on net deferred taxes	(21.28)	—
Federal research and development credits	1.38	1.89
Change in valuation allowance	(20.29)	(25.23)
	—%	—%

Deferred tax assets consist of the following at December 31, 2017 and 2018 (in thousands):

	As of December 31,	
	2017	2018
Deferred tax assets:		
Net operating loss carryforwards	$ 6,140	$ 8,631
Research and development credit carryforwards	726	938
Intangible assets	1,760	4,670
Reserves and accruals	384	692
Stock-based compensation	—	11
Total deferred tax assets:	9,010	14,942
Valuation allowance	(8,947)	(14,710)
Subtotal	63	232
Fixed assets	(63)	(232)
Total net deferred tax assets	$ —	$ —

As required by ASC 740, the Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets, which are composed principally of NOL carryforwards and research and development credit carryforwards. The Company has determined that it is more likely than not that the Company will not realize the benefits of its federal and state deferred tax assets, and, as a result, a valuation allowance of $8,947,000 and $14,710,000 has been established at December 31, 2017 and

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

9. Income Taxes (Continued)

2018, respectively. The change in the valuation allowance was $3,433,000 and $5,763,000 for the years ended December 31, 2017 and 2018.

The Company has incurred NOLs from inception. At December 31, 2018, the Company has federal and state NOL carryforwards of approximately $34,672,000 and $21,364,000, respectively, available to reduce future taxable income, that expire beginning in 2036. As of December 31, 2018, the Company also has federal and state research and development tax credit carryforwards of approximately $617,000 and $406,000 respectively, to offset future income taxes, which will begin to expire beginning in December 2031. The Company's NOL carryforwards are subject to review and possible adjustment by the appropriate taxing authorities. These NOL carryforwards that may be utilized in any future period may be subject to limitations based upon changes in the ownership of the Company's stock in a prior or future period. The Company has not quantified the amount of such limitations, if any.

On December 22, 2017, the Tax Cuts and Jobs Act ("the Act") was signed into law. The Act, among other things, contains significant changes to corporate taxation, including reduction of the corporate tax rate from a marginal rate of 34% to a flat rate of 21%, limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses), limitation of the deduction for net operating losses to 80% of current year taxable income and elimination of net operating loss carrybacks, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, elimination of U.S. tax on foreign earnings (subject to certain important exceptions), immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modifying or repealing many business deductions and credits.

The Company recognizes the changes in tax law, including the Act, in the period the law is enacted. Accordingly, the effects of the Act have been recognized in the financial statements for the year ended December 31, 2017. As a result of the change in law, the Company recorded a reduction to its deferred tax assets and a corresponding reduction to its valuation allowance. As a result, there was no impact to the Company's income statement due to the reduction in the U.S. corporate tax rate. The Company also had no investments in foreign corporations as of December 31, 2017 or 2018 or March 31, 2019. The Company's reporting of the Act was complete as of December 31, 2018 and no adjustment to the provisional amounts recorded as of December 31, 2017 was recorded.

The Company follows the provisions of ASC 740-10, "Accounting for Uncertainty in Income Taxes," which specifies how tax benefits for uncertain tax positions are to be recognized, measured, and recorded in financial statements; requires certain disclosures of uncertain tax matters; specifies how reserves for uncertain tax positions should be classified on the balance sheet; and provides transition and interim period guidance, among other provisions. As of December 31, 2017 and 2018 and March 31, 2019, the Company had no unrecognized tax benefits. The Company has not, as of yet, conducted a study of its research and development credit carryforwards. Such a study may result in an adjustment to the Company's research and development credit carryforwards; however, until a study is completed and any adjustment is known, no amount is being presented as an uncertain tax position. A full valuation allowance has been provided against the Company's research and development credits, and, if an adjustment is required, this adjustment would be offset by an adjustment to the valuation allowance. Thus, there would be no impact to the balance sheet or statement of operations and comprehensive loss if an adjustment were required.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

9. Income Taxes (Continued)

The Company's policy is to recognize interest and penalties accrued on any uncertain tax positions as a component of income tax expense, if any, in its statements of operations.

For the years ended December 31, 2017 and 2018 and three months ended March 31, 2019, no estimated interest or penalties were recognized on uncertain tax positions. The Company does not expect any significant change in its uncertain tax positions in the next 12 months.

The Company files U.S. federal and state income tax returns and is generally subject to income tax examinations by these authorities for all tax years. Currently, no federal or state income tax returns are under examination by the respective income tax authorities.

Income Tax Expense for Interim Periods

The income tax expense recorded in any interim period is based on the estimated effective tax rate for the fiscal year for those tax jurisdictions that can be reliably estimated. The calculation of the estimated effective tax rate requires an estimate of pre-tax income by tax jurisdiction as well as total tax expense for the fiscal year. Accordingly, the annual estimated effective tax rate is subject to adjustment if there are changes to the initial estimates of total tax expense or pre-tax income.

Provision for Income Taxes

The Company recorded an income tax expense of $129,000 and zero for the three months ended March 31, 2019 and 2018, respectively. In the three months ended March 31, 2019, the income tax expense recorded was driven largely by the projected current tax liability associated with the tax recognition of upfront collaboration payment received in 2018. A significant portion of the taxable income related to the collaboration payment is projected to be offset by current year expenses and prior year accumulated losses. A current tax liability has been projected for any remaining taxable income. The company reported no income tax provision in the three months ended March 31, 2018, as the Company generated a taxable loss, offset by an increase to the company's valuation allowance.

Despite the collaboration revenue, we continue to maintain a valuation allowance against all of our deferred tax assets. The Company believes that it is more likely than not that it will not realize a future tax benefit of these attributes, as the research and development efforts continue to require significant investment and future revenue is subject to uncertainties. Ultimate realization of any deferred tax asset is dependent on the Company's ability to generate sufficient future taxable income in the appropriate tax jurisdiction before the expiration of carryforward periods, if any.

The Company currently anticipates that there will be no change in its unrecognized tax benefits during the next twelve months. As of March 31, 2019 the Company had no unrecognized tax benefits. The Company has not, as yet, conducted a study of its research and development credit carryforwards. Such a study may result in an adjustment to the Company's research and development credit carryforwards; however, until a study is completed and any adjustment is known, no amount is being presented as an uncertain tax position. A full valuation allowance has been provided against the Company's research and development credits, and, if an adjustment is required, this adjustment would be offset by an adjustment to the valuation allowance. Thus, there would be no impact to the balance sheet or statement of operations and comprehensive loss if an adjustment were required.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

10. Commitments and Contingencies

Guarantees and Indemnifications

As permitted under Delaware law, Morphic Holding, Inc indemnifies its officers, directors, and employees for certain events, occurring while the officer, or director is, or was, serving at the Company's request in such capacity. The term of the indemnification is for the officer's or director's lifetime.

The Company has standard indemnification arrangements in its leases for laboratory and office space that require it to indemnify the landlord against any liability for injury, loss, accident, or damage from any claims, actions, proceedings, or costs resulting from certain acts, breaches, violations, or non-performance under the Company's lease.

Through March 31, 2019, the Company had not experienced any losses related to these indemnifications obligations, and no material claims were outstanding. The Company does not expect significant claims related to these indemnification obligations and, consequently, concluded that the fair value of these obligations is negligible, and no related reserves were established.

Operating Leases

Facility Lease

In August 2015, the Company leased approximately 11,000 square feet of office and laboratory space, and obtained services (facilities management, office, and laboratory services) under an operating lease that expires in December 2020. The lease has monthly lease payments of $34,429 the first 12 months with annual rent escalations thereafter and provides a rent abatement of $9,762 per month for the first three months. The Company has an option to extend the lease by three years at a rate of at least the amount paid in the last year of the current lease or the then-current market rate, whichever is higher. In accordance with the lease, the Company entered into a cash-collateralized irrevocable standby letter of credit naming the landlord as beneficiary and the amount is included in restricted cash in the consolidated balance sheets.

In June 2017, the Company leased approximately 21,000 square feet of additional laboratory and office space by amending the existing lease and extending the lease to May 2022. As a result of the amendment, the additional space has monthly rent payments of $56,371 for the first twelve months with annual rent escalations thereafter for the remaining term of the lease and provides a rent abatement for the first three months. The amendment also required the Company to increase the restricted cash by amending the letter of credit to $275,189.

In November 2017, the Company subleased approximately 2,000 square feet of office & lab space to a subtenant. The subtenant will pay the Company $6,351 per month for the first twelve months with annual rent escalations thereafter through April 2020. The Company received a $16,594 security deposit from the subtenant which the Company has included in other long-term liabilities and will be returned to the subtenant upon vacancy of the premises and the subtenant's performance of its obligations under the sublease.

The Company recognizes rent expense for the space it currently occupies and records a deferred rent obligation representing the cumulative difference between actual rent payments and rent expense recognized ratably over the lease period, which is included in the Company's consolidated balance sheets as of December 31, 2017 and 2018 and March 31, 2019.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

10. Commitments and Contingencies (Continued)

Minimum annual rent payments under this lease for the remaining term of the amended lease, excluding operating expenses and taxes which are not fixed for future periods as of December 31, 2018 and March 31, 2019, are as follows (in thousands):

	December 31, 2018			March 31, 2019		
Year ending December 31,	Total Minimum Lease Payments	Sublease Income	Net Minimum Lease Payments	Total Minimum Lease Payments	Sublease Income (unaudited)	Net Minimum Lease Payments
2019	$ 1,087	$ (159)	$ 928	$ 818(1)	$ (119)	$ 699
2020	1,122	(110)	1,012	1,122	(110)	1,012
2021	1,175	—	1,175	1,175	—	1,175
2022	495	—	495	495	—	495
Total minimum lease payments	$ 3,879	$ (269)	$ 3,610	$ 3,610	$ (229)	$ 3,381

(1) The amounts are for the nine months ending December 31, 2019.

The Company recorded approximately $849,000 and $941,000 in rent expense for the years ended December 31, 2017 and 2018, respectively, and $256,000 and $218,000 for three months ended March 31, 2018 and 2019, respectively.

Legal Proceedings

The Company is not currently a party to any material legal proceedings.

11. Extinguishment of Notes Payable

In December 2018, the Company extinguished its obligation under the 2016 Loan and Security Agreement with Silicon Valley Bank (the "SVB Agreement"). As part of extinguishment, the Company paid the 5% of amounts drawn fee, originally agreed upon, certain other fees required by the Silicon Valley Bank, and recognized charges related to unaccreted issuance discount and unamortized debt issuance costs, resulting in the aggregate loss of $28,000. Notes payable balance was $630,000, $0, and $0 at December 31, 2017 and 2018 and March 31, 2019, respectively.

In 2016, in connection with obtaining funding under the SVB Agreement, the Company issued a warrant to purchase 19,881 Series Seed Preferred Units at $0.75286 unit on March 31, 2016 and a warrant to purchase 19,919 Series Seed Preferred Units at $0.75286 per unit on December 31, 2016. The warrants were outstanding on December 31, 2018 and March 31, 2019 and were included in other long-term liabilities.

12. Option and License Agreements

AbbVie Agreement Overview

In October 2018, the Company entered into a 5-year collaboration and option agreement with AbbVie, "Abbvie agreement", a research-based global biopharmaceutical company and a related party holding in aggregate approximately 5% of outstanding Series A and Series B Convertible Preferred Shares of the

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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12. Option and License Agreements (Continued)

Company. Pursuant to this agreement, AbbVie paid the Company an upfront, non-refundable amount of $100.0 million. In exchange, the Company: (i) assumed the obligation to perform research and development activities to identify and develop compounds directed at multiple fibrosis indications (grouped into four research programs) through completion of Investigational New Drug (IND)-enabling studies, and (ii) granted AbbVie options to license the results of R&D in exchange for separate upfront option-exercise fees.

At any time during the five-year period, AbbVie holds the right to exercise its license options for molecules with the selected pharmacological profiles by providing written notice to the Company and paying an option exercise fee of $20.0 million per option exercised (up to three in total). The Company's obligations to perform R&D activities for the molecules with selected pharmacological profile cease after AbbVie exercises the option(s) and accepts the results of R&D activities. Upon exercise of an option, AbbVie assumes full responsibility for further development of the molecules at its sole cost, and the Company is obligated to transfer any and all manufacturing related activities to AbbVie at AbbVie's cost. In addition, after AbbVie exercises its options, it is obligated to pay the Company certain development milestones totaling up to $80.0 million per indication, launch milestones totaling up to $110.0 million per indication, and net sales milestones totalling up to $160.0 million per indication. Development milestones are triggered upon the initiation of various phases of clinical trials. Launch milestones are achieved by recording first commercial sale in each of the specified markets. The net sales milestones are achieved by reaching the agreed upon volume of sales in certain territories. The Company is also entitled to royalty payments ranging in high single digit to low teens percentage of sales in a calendar year. The Company retained cost-sharing rights in the development of compounds for the liver fibrosis indications, including non-alcoholic steatohepatitis, and may opt into paying a percentage of AbbVie's development costs in exchange for enhanced royalties. As of March 31, 2019, AbbVie has not exercised any options.

AbbVie Agreement Accounting Analysis

The Company has concluded that the performance obligations in the agreement include the research services for the four research programs. The Company has concluded that the unexercised license options were marketing offers as the options did not provide any discounts or other rights that would be considered a material right in the arrangement. All other performance obligations were determined to be immaterial in the context of the contract.

The Company estimated the standalone selling price of each research program based on internal and external costs to perform the research plus a reasonable profit margin of 10%. The total estimated cost of the research and development services reflects the nature of the services to be performed and the Company's best estimate of the length of time required to perform the services. The Company recognizes revenue as research and development services are provided based on the costs incurred to date, as such costs have direct relationship between the Company's effort and the progress made towards satisfying its performance obligations to AbbVie. Changes in estimates of total internal and external costs expected to be incurred are recognized in the period of change as a cumulative catch-up adjustment. There have been no changes to the Company's estimates to date.

The Company determined that the transaction price included only the non-refundable up-front payment of $100.0 million. The option exercise payments were not included in the transaction price, as the Company

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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12. Option and License Agreements (Continued)

determined that the agreed upon fees represent fair value of such options. Exercise of any of the options will be accounted for as contract modification if and when AbbVie delivers the written exercise notice. The milestone payments were fully constrained, as a result of the uncertainty regarding whether AbbVie would exercise any of the options and whether any of the associated milestones would be achieved. There have been no changes to the transaction price in 2018 or three months ended March 31, 2019.

The Company also considered the existence of any significant financing component within the AbbVie Agreement given its upfront payment structure. Based upon this assessment, the Company concluded that the up-front payment was provided for valid business reasons and not for the purpose of providing financing. Accordingly, the Company has concluded that the upfront payment structure of the AbbVie Agreement does not result in the existence of a significant financing component.

During the year ended December 31, 2018, the Company recorded the upfront payment of $100.0 million as deferred revenue and recognized revenue of $3.4 million related to research services performed during 2018. The Company recognized revenue of $5.6 million related to research services performed during three months ended March 31, 2019. As of December 31, 2018 and March 31, 2019, the Company had $96.6 million and $91 million, respectively, of deferred revenue, which is classified as either current or net of current portion in the accompanying consolidated balance sheets based on the period over which the revenue is expected to be recognized. This deferred revenue balance represents the aggregate amount of the transaction price allocated to the performance obligations that are partially unsatisfied as of December 31, 2018 and March 31, 2019. The Company expects to recognize revenue related to these performance obligations through 2024.

Janssen Agreement — Overview

In February 2019, the Company entered into a research collaboration and option agreement with Janssen Pharmaceuticals, Inc. ("Janssen agreement"), a subsidiary of Johnson & Johnson, to discover and develop novel integrin therapeutics for patients with conditions not adequately addressed by current therapies. The Janssen agreement focuses on three integrin targets, each target the subject of a research program, with a limited ability to substitute integrin targets for others, not explored by the Company, if research results are not favorable. Under the terms of the agreement, Janssen paid the Company an upfront fee of $10.0 million for the first two research programs and will pay the Company an additional $5.0 million fee upon commencement of the third research program. In addition, Janssen will reimburse the Company for all internal and external costs and expenses incurred during the term of agreement at an agreed-upon contractual rates. Upon completing IND-enabling studies, on a research program-by-research program basis, Janssen, in exchange for one time fee of $6 million per program, may exercise an exclusive option to obtain an exclusive license with respect to the target that is the subject of the research program, including all licensed compounds that are the subject of the applicable research program. Upon exercise of an option, Janssen will be responsible for global clinical development and commercialization of each licensed compound. Pursuant to the terms of the agreement, the Company is eligible to receive additional research and development milestone payments totaling $142 million per research program and net sales milestones payments totaling $90 million per research program. Research and development milestones are triggered upon the initiation of certain development activities and various phases of clinical trials. The net sales milestones are achieved by reaching the agreed upon volume of sales in certain territories. In addition, the Company is entitled to royalty payments in low-to-mid single digit percentage of sales in a calendar year.

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

12. Option and License Agreements (Continued)

Janssen Agreement — Accounting Analysis

The Company has concluded that the performance obligations in the agreement include the research services for the three research programs and three options to license the outcomes of those research programs, which were determined to provide Janssen with material rights. All other performance obligations were determined to be immaterial in the context of the contract.

The Company estimated the standalone selling price of each research program based on internal and external costs to perform the research plus a reasonable profit margin. The total estimated cost of the research and development services reflect the nature of the services to be performed and the Company's best estimate of the length of time required to perform the services. The Company estimated the standalone selling price of each material right by determining the discount provided to the estimated standalone selling price of comparable options and applying appropriate likelihood of exercise, which includes the appropriate probability of successfully completing the research efforts. Based on the standalone selling prices determined, the company allocates the total transaction price among the programs and material rights.

The Company recognizes revenue as research services are provided based on the costs incurred to date, as such costs have direct relationship between the Company's effort and the progress made towards satisfying its performance obligations to Janssen. Transaction price allocated to the material rights was deferred and will be recognized in revenue when Janssen exercises the options or the option period expires. Changes in estimates of total internal and external costs expected to be incurred are recognized in the period of change as a cumulative catch-up adjustment. There have been no changes to the Company's estimates to date.

The Company determined that the transaction price included: the non-refundable up-front payment of $10.0 million for the first two programs, $5 million non-refundable up-front payment for the third program to be received at a later point, and the estimated payments to be received from Janssen for the Company's on-going research services. The option exercise payments were not included in the transaction price. Exercise of any of the options will be accounted for as a continuation of the current contract if and when Janssen delivers the written exercise notice. The milestone payments were fully constrained, as a result of the uncertainty regarding whether Janssen would exercise any of the options and whether any of the associated milestones would be achieved.

The Company also considered the existence of any significant financing component within the Janssen Agreement given its upfront payment structure. Based upon this assessment, the Company concluded that the up-front payment was provided for valid business reasons and not for the purpose of providing financing. Accordingly, the Company has concluded that the upfront payment structure of the Janssen Agreement does not result in the existence of a significant financing component.

During the three months period ended March 31, 2019, the Company recorded the $10 million upfront payment as deferred revenue and recognized revenue of $0.5 million related to research services performed during three months ended March 31, 2019. As of March 31, 2019, $9.5 million of deferred revenue is classified as either current or net of current portion in the accompanying consolidated balance sheets based on the period over which the revenue is expected to be recognized. This deferred revenue balance represents the aggregate amount of the transaction price allocated to the performance obligations that are

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

12. Option and License Agreements (Continued)

partially unsatisfied as of March 31, 2019. The Company expects to recognize revenue related to these performance obligations through 2024.

13. Net Loss per Unit and Share

Basic and diluted net loss per unit is calculated as follows (in thousands, except unit and per unit data):

	Year Ended December 31, 2017	Three Months Ended March 31, 2018 (unaudited)
Net loss	$ (16,920)	$ (5,180)
Weighted average common units outstanding, basic and diluted	5,896,584	5,896,584
Net loss per unit, basic and diluted	$ (2.87)	$ (0.88)

Following the Reorganization, the Company calculates net loss per share based on its outstanding shares of common stock. For the year ended December 31, 2018, the weighted-average number of common shares outstanding includes the weighted-average number of common units outstanding prior to the Reorganization.

	Year Ended December 31, 2018	Three Months Ended March 31, 2019 (unaudited)
Net loss	$ (23,831)	$ (5,200)
Weighted average common shares outstanding, basic and diluted	6,237,889	10,962,388
Net loss per share, basic and diluted	$ (3.82)	$ (0.47)

The following table sets forth the outstanding common unit or common stock equivalents, presented based on amounts outstanding at each period end, that have been excluded from the calculation of diluted net

MORPHIC HOLDING, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(Information as of March 31, 2018 and 2019 and for the three months ended March 31, 2019 and 2018 is unaudited)

13. Net Loss per Unit and Share (Continued)

loss per unit or share for the periods indicated because their inclusion would have been anti-dilutive (in common unit or common stock equivalent shares, as applicable):

	Year Ended December 31,		Three Months Ended March 31	
	2017	2018	2018	2019
			(unaudited)	
Convertible preferred units	51,165,983	—	51,165,983	—
Convertible preferred stock	—	122,513,962	—	122,513,962
Incentive units	2,561,790	—	3,100,112	—
Restricted common stock	—	4,391,433	—	3,808,837
Warrant	39,800	39,800	39,800	39,800
Stock options	—	10,417,696	—	10,417,696
	53,767,573	137,362,891	54,305,895	136,780,295

14. Employee Benefit Plan

In 2016, the Company adopted a qualified retirement plan, the Morphic Therapeutic, Inc. 401(k) Plan (the "Plan") to provide retirement income for eligible employees through employee contributions and employer matching contributions. The Company matches 50% up to the first 6% contributed by a participant. Contributions totaled $112,000 and $182,000 for the year ended December 31, 2017 and 2018, respectively, and $34,000 and $39,000 for the three months ended March 31, 2018 and 2019, respectively.

Shares

Morphic Holding, Inc.

Common Stock

PRELIMINARY PROSPECTUS

Joint Book-Running Managers

Jefferies
Cowen
BMO Capital Markets
Wells Fargo Securities

, 2019

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The following table sets forth all costs and expenses, other than underwriting discounts and commissions, paid or payable by the Registrant in connection with the sale of the common stock being registered. All amounts shown are estimates except for the Securities and Exchange Commission, or SEC, registration fee, the Financial Industry Regulatory Approval, or FINRA, filing fee and the Nasdaq Global Market listing fee:

	Amount Paid or To Be Paid
SEC registration fee	$ *
FINRA filing fee	*
The Nasdaq Global Market listing fee	*
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Blue Sky, qualification fees and expenses	*
Transfer agent and registrar fees and expenses	*
Miscellaneous expenses	*
Total	$ *

* To be completed by amendment.

ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the Delaware General Corporation Law, or DGCL, authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers under certain circumstances and subject to certain limitations. The terms of Section 145 of the DGCL are sufficiently broad to permit indemnification under certain circumstances for liabilities, including reimbursement of expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act.

As permitted by the DGCL, the Registrant's restated certificate of incorporation to be effective in connection with the completion of this offering contains provisions that eliminate the personal liability of its directors for monetary damages for any breach of fiduciary duties as a director, except liability for the following:

- any breach of the director's duty of loyalty to the Registrant or its stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- under Section 174 of the DGCL (regarding unlawful dividends and stock purchases); or
- any transaction from which the director derived an improper personal benefit.

As permitted by the DGCL, the Registrant's restated bylaws to be effective in connection with the completion of this offering, provide that:

- the Registrant is required to indemnify its directors and executive officers to the fullest extent permitted by the DGCL, subject to limited exceptions;
- the Registrant may indemnify its other employees and agents as set forth in the DGCL;

- the Registrant is required to advance expenses, as incurred, to its directors and executive officers in connection with a legal proceeding to the fullest extent permitted by the DGCL, subject to limited exceptions; and
- the rights conferred in the restated bylaws are not exclusive.

Prior to the completion of this offering, the Registrant intends to enter into indemnification agreements with each of its current directors and executive officers to provide these directors and executive officers additional contractual assurances regarding the scope of the indemnification set forth in the Registrant's restated certificate of incorporation and restated bylaws and to provide additional procedural protections. There is no pending litigation or proceeding involving a director or executive officer of the Registrant for which indemnification is sought. Reference is also made to the underwriting agreement to be filed as Exhibit 1.1 to this registration statement, which provides for the indemnification of executive officers, directors and controlling persons of the Registrant against certain liabilities. The indemnification provisions in the Registrant's restated certificate of incorporation, restated bylaws and the indemnification agreements entered into or to be entered into between the Registrant and each of its directors and executive officers may be sufficiently broad to permit indemnification of the Registrant's directors and executive officers for liabilities arising under the Securities Act.

The Registrant has directors' and officers' liability insurance for securities matters.

ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES.

The following lists set forth information regarding all securities sold or granted by the Registrant from May 15, 2016 through May 15, 2019 that were not registered under the Securities Act, and the consideration, if any, received by the Registrant for such securities:

(a) The Reorganization

On December 5, 2018, the Registrant completed a reorganization whereby it converted from a Delaware limited liability company under the name Morphic Holding, LLC to a Delaware corporation under the name Morphic Holding, Inc. In conjunction with the reorganization, (i) all of the Registrant's outstanding common units converted on a one-for-one basis into 5,896,584 shares of common stock; (ii) all of the Registrant's outstanding preferred units converted on a one-for-one basis into 122,513,962 shares of convertible preferred stock; and (iii) all of the Registrant's outstanding vested and unvested incentive units converted on a one-for-one basis into 9,182,834 shares of common stock and restricted common stock, respectively. The restricted common stock was issued with the same vesting terms as the incentive units held immediately prior to the reorganization. The securities issued in this transaction were exempt from the registration requirements of the Securities Act in reliance on Sections 4(a)(2) and/or 3(a)(9) of the Securities Act or Rule 701 promulgated under the Securities Act.

(b) Stock Option Grants

From May 15, 2016 and through May 15, 2019, the Registrant has granted to its employees, directors, consultants and other service providers options to purchase an aggregate of 11,939,696 shares of common stock under the 2018 Plan, with exercise prices ranging from $0.74 to $1.33 per share. The issuances of the securities described above were deemed to be exempt from registration pursuant to Section 4(a)(2) of the Securities Act or Rule 701 promulgated under the Securities Act as transactions pursuant to compensatory benefit plans. The shares of common stock issued upon the exercise of options are deemed to be restricted securities for purposes of the Securities Act.

(c) Preferred Stock

In September 2018, the Registrant issued and sold to 13 accredited investors an aggregate of 61,538,454 shares of Series B convertible preferred stock at a purchase price of $1.30 per share, for aggregate consideration of approximately $80.0 million. In connection with the completion of this offering, these shares of Series B convertible preferred stock will convert into 61,538,454 shares of the Registrant's

common stock. This transaction was exempt from the registration requirements of the Securities Act in reliance upon Section 4(2) of the Securities Act or Regulation D promulgated under the Securities Act.

In June 2016, September 2017 and August 2018, the Registrant issued and sold to 12 accredited investors an aggregate of 49,047,619 shares of Series A convertible preferred stock at a purchase price of $1.05 per share, for aggregate consideration of approximately $51.5 million. In connection with the completion of this offering, these shares of Series A convertible preferred stock will convert into 49,047,619 shares of the Registrant's common stock. This transaction was exempt from the registration requirements of the Securities Act in reliance upon Section 4(2) of the Securities Act or Regulation D promulgated under the Securities Act.

(d) Warrant to Purchase Preferred Stock

In March 2016, in connection with the Registrant's Loan and Security Agreement with Silicon Valley Bank, the Registrant issued to Silicon Valley Bank a warrant to purchase an aggregate of 39,800 Series Seed preferred units at a price per unit of $0.75286. On December 5, 2018, in connection with the Registrant's reorganization into a Delaware corporation, the warrant automatically became exercisable for an aggregate of 39,800 shares of the Registrant's Series Seed convertible preferred stock at a per share exercise price of $0.75286, for an aggregate consideration of approximately $29,864. This warrant will automatically convert into a warrant to purchase shares of the Registrant's common stock upon the completion of this offering. The securities issued in this transaction were exempt from the registration requirements of the Securities Act in reliance on Section 4(a)(2) of the Securities Act.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions or any public offering, and the Registrant believes each transaction was exempt from the registration requirements of the Securities Act as stated above. All recipients of the foregoing transactions either received adequate information about the Registrant or had access, through their relationships with the Registrant, to such information. Furthermore, the Registrant affixed appropriate legends to the share certificates and instruments issued in each foregoing transaction setting forth that the securities had not been registered and the applicable restrictions on transfer.

ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

(a) Exhibits.

Exhibit Number	Description of Document
1.1*	Form of Underwriting Agreement.
3.1+	Certificate of Incorporation, as currently in effect.
3.2*	Form of Restated Certificate of Incorporation to be effective upon the completion of this offering.
3.3+	Bylaws, as currently in effect.
3.4*	Form of Restated Bylaws to be effective upon the completion of this offering.
4.1*	Form of Common Stock Certificate.
4.2+	Investors' Rights Agreement, dated December 5, 2018, by and among the Registrant and certain of its stockholders.
4.3+	Warrant by and between the Registrant and Silicon Valley Bank.
5.1*	Opinion of Fenwick & West LLP.
10.1*	Form of Indemnity Agreement.

Exhibit Number	Description of Document
10.2+	2018 Stock Incentive Plan, and forms of award agreements.
10.3*	2019 Equity Incentive Plan, to become effective on the date immediately prior to the date the registration statement is declared effective, and forms of award agreements.
10.4*	2019 Employee Stock Purchase Plan, to become effective on the date the registration statement is declared effective, and forms of award agreements.
10.5*	Offer Letter, dated , 2019, by and between Morphic Therapeutic, Inc. and Praveen P. Tipirneni, MD.
10.6*	Offer Letter, dated , 2019, by and between Morphic Therapeutic, Inc. and Bruce N. Rogers, Ph.D.
10.7*	Offer Letter, dated , 2019, by and between Morphic Therapeutic, Inc. and Alexey A. Lugovskoy, Ph.D.
10.8+	Consulting Agreement, dated June 1, 2015, by and between the Registrant and Timothy A. Springer, Ph.D.
10.9	Lease, dated August 5, 2015, by and between the Registrant and AstraZeneca Pharmaceuticals Limited Partnership, as amended.
10.10†	Research Collaboration and Option Agreement, dated February 15, 2019, by and among Janssen Pharmaceuticals, Inc. and the Registrant.
10.11†	Collaboration and Option Agreement, dated October 16, 2018, by and between AbbVie Biotechnology Ltd and the Registrant.
10.12†	Collaboration Agreement, dated June 10, 2015, by and between Morphic Rock Therapeutic, Inc. and Schrödinger, LLC, as amended.
10.13†	Exclusive License Agreement, dated October 7, 2015, by and between Children's Medical Center Corporation and the Registrant, as amended.
10.14*	Form of Change in Control and Severance Agreement.
21.1+	Subsidiaries of the Registrant.
23.1*	Consent of Ernst & Young LLP, an independent registered public accounting firm.
23.2*	Consent of Fenwick & West LLP (included in Exhibit 5.1).
24.1*	Power of Attorney (included in the signature page to this registration statement).

* To be filed by amendment.

\+ Previously filed.

† Registrant has omitted portions of the exhibit as permitted under Item 601(b)(10) of Regulation S-K.

(b) Financial Statement Schedules.

No financial statement schedules are provided because the information called for is not required or is shown either in the financial statements or notes.

ITEM 17. UNDERTAKINGS.

The undersigned Registrant hereby undertakes to provide to the underwriters at the completion specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant has duly caused this registration statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Waltham, State of Massachusetts, on the day of , 2019.

MORPHIC HOLDING, INC.

By: _____

Praveen P. Tipirneni, M.D.
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Praveen P. Tipirneni and William D. DeVaul, and each of them, as his or her true and lawful attorneys-in-fact, proxies and agents, each with full power of substitution and resubstitution and full power to act without the other, for him or her in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments or any abbreviated registration statement and any amendments thereto filed pursuant to Rule 462(b) increasing the number of securities for which registration is sought), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact, proxies and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, proxies and agents, or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement on Form S-1 has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
_____ Praveen P. Tipirneni, M.D.	President, Chief Executive Officer and Director (Principal Executive Officer)	, 2019
_____ Robert E. Farrell, Jr., CPA	Vice President of Finance and Operations and Treasurer (Principal Accounting and Financial Officer)	, 2019
_____ Gustav Christensen	Director	, 2019
_____ Barbara J. Dalton, Ph.D.	Director	, 2019

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Signature	Title	Date
Ramy Farid, Ph.D	Director	, 2019
Vikas Goyal	Director	, 2019
Nilesh Kumar, Ph.D.	Director	, 2019
Amir Nashat	Director	, 2019
Timothy A. Springer, Ph.D.	Director	, 2019
Otello Stampacchia, Ph.D.	Director	, 2019

Exhibit 10.9

LEASE

OF PREMISES AT 35 GATEHOUSE DRIVE,

WALTHAM, MASSACHUSETTS

FROM

ASTRAZENECA PHARMACEUTICALS LIMITED PARTNERSHIP

TO

MORPHIC ROCK THERAPEUTIC, INC.

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SUMMARY OF BASIC TERMS

OFFICE LEASE

OF PREMISES AT 35 GATEHOUSE DRIVE,

WALTHAM, MASSACHUSETTS

TO

MORPHIC ROCK THERAPEUTIC, INC.

DATED AS OF AUGUST 5, 2015

The following is a summary of certain basic terms of this Lease which is intended for the convenience and reference of the parties. Capitalized terms used, but not defined, in this Summary of Basic Terms, have their defined meanings in this Lease. In addition, some of the following items or terms are incorporated into this Lease by reference to the item or term or to this "Summary of Basic Terms".

1. Landlord: **ASTRAZENECA PHARMACEUTICALS LIMITED PARTNERSHIP**

2. Tenant: **MORPHIC ROCK THERAPEUTIC, INC.**

3A. Premises: Approximately 11,166 square feet of rentable space located in Building A on Level 2 of the Building ("A2"), depicted as the "Office" and "Lab" area within the "Limit of House A" on the floor plan attached hereto as Exhibit C.

3B. Landlord's Property: The real property with the Building and any other improvements now or hereafter thereon, commonly known as 35 Gatehouse Drive, Waltham, Massachusetts, as described on Exhibit A and depicted on Exhibit B.

3C. Leasable Square Footage of the Premises: (which includes a proportionate share of the Common Areas of the Building): 11,166 rentable square feet.

3D. Leasable Square Footage of the Building: An agreed upon 297,576 rentable square feet, subject to adjustment in the event that the Common Areas of the Building are expanded or reconfigured.

3E. Landlord's Equipment: The equipment owned by Landlord and located in the Premises on the date of Landlord's delivery of the Premises to Tenant. A complete itemization of Landlord's Equipment will be agreed upon and listed on an exhibit to this Lease within thirty (30) days after the Term Commencement Date. Tenant shall also have the right to use during the term hereof the Landlord's work stations and furniture presently located in the Premises ("Landlord's Furniture") without warranty or representation as to their usage, fitness or condition. The Landlord shall have no obligation to maintain, replace or repair said furniture. The aforesaid furniture shall remain the property of the Landlord

and returned at the end of the Lease term in the same condition as on the Term Commencement Date, reasonable wear and tear and damage by fire or other casualty excepted.

4. Tenant Improvement Allowance: None. Tenant shall be responsible for and pay for its own Tenant improvements including, without limitation, for all telephone, data wiring and equipment installation throughout the Premises and for connection to the main demarcation room from local exchange carriers, domestic water distribution within the Premises, hot water requirements, safety equipment, laboratory waste removal and office cleaning.

5A. Lease Term: an approximately sixty-four calendar month period commencing on the Term Commencement Date and ending on the last day of the fifth (5th) Lease Year following the Rent Commencement Date, and, if exercised, the three (3) year period under the Right of Extension.

5B. Right of Extension: Tenant shall have the right to extend the Lease Term for one (1) three (3) year term in accordance with Section 2.4(b).

6. Permitted Use: General business offices, scientific research and development laboratory, and uses customarily accessory thereto. The foregoing notwithstanding, under no circumstances shall the Premises be used in any manner related to the Generic Drug business of any nature or description including, without limitation, the manufacture, development, sales, distribution or marketing of such products.

7. Tenant's Parking Allocation: twenty-eight (28) unassigned parking spaces (2.5 spaces per 1,000 leasable square feet of the Premises), subject to the provisions of Section 2.3.

8. Base Rent: The Base Rent for the Initial Term shall be as set forth in the chart below:

Period	Base Rent per rsf	Annual Base Rent	Monthly Base Rent
Lease Year 1	$ 37.00	$ 413,142.00	$ 34,428.50*
Lease Year 2	$ 38.00	$ 424,308.00	$ 35,359.00
Lease Year 3	$ 39.00	$ 435,474.00	$ 36,289.50
Lease Year 4	$ 40.00	$ 446,640.00	$ 37,220.00
Lease Year 5	$ 41.00	$ 457,806.00	$ 38,150.50

* Base Rent shall abate for the period beginning on the Rent Commencement Date in the amount of $9,761.83 per month for the three (3) months of the Lease Term following the Rent Commencement Date for a total Base Rent abatement of $29,285.50.

As used above, a "Lease Year" shall mean a period of twelve (12) full calendar months, where each successive Lease Year following Lease Year 1 shall commence on each anniversary of the Rent Commencement Date (or the first day of the first full calendar month following the Rent Commencement Date if the Rent Commencement Date is on a day other than the 1st of a calendar month).

The Base Rent for the Extension Term, if any, will be Fair Market Rent (as defined in Section 4.7 below), but in no event less than the Base Rent for the Lease Year immediately prior to such Extension Term.

9A. Additional Rent: Tenant's Tax Escalation, Tenant's Operating Cost Escalation, Water Service Charge and/or Tenant's Electricity Costs and all other sums (other than Base Rent) payable by Tenant to Landlord under this Lease.

9B. Tenant's Tax Escalation: Tenant's Share of Taxes for any Tax Fiscal Year occurring in whole or in part during the Lease Term; payable monthly in equal installments. Tenant's Tax Escalation for fiscal year 2015 is estimated to be approximately $8.09 per rentable square foot

9C. Tenant's Operating Cost Escalation: Tenant's Share of the Operating Costs for any calendar year occurring whole or in part during the Lease Term; payable monthly in equal installments. Tenant's Operating Cost Escalation for fiscal year 2015 is estimated to be approximately $9.63 per rentable square foot.

9D. Tenant's Electricity Costs: Tenant shall pay the costs for electricity for lights and plugs and HVAC service provided to the Premises in accordance with Sections 4.5 and 7.2 ("Tenant's Electricity Costs"). If not separately metered or sub-metered, Tenant will pay its pro-rata costs monthly as allocated by the Landlord.

10. Heat and Utilities: Other than utilities furnished by Landlord pursuant to this Lease, Tenant shall be responsible for contracting directly with the utility providers for all utility service to the Premises, including, without limitation, all utilities necessary to provide supplemental HVAC service to the Premises. If not separately metered, Tenant will pay its pro-rata costs monthly as allocated by the Landlord.

11. Brokers: Transwestern RBJ.

12A. Tenant's Address For Notices, Telephone Number, Fax Number and Taxpayer Identification No.:

Until the Term Commencement Date:
Morphic Rock Therapeutic, Inc.
c/o Polaris Venture Partners
1000 Winter Street, Suite 3350
Waltham, MA 02451
Attn: Praveen Tipirneni, CEO

And thereafter at the Premises to the attention of the same officer

With a copy to:

Foley Hoag LLP
155 Seaport Boulevard
Boston, MA 02210

Attn: Mark A. Haddad, Esq.

Tenant F.I.D. #47-3882977

12B. Landlord's Address for Notices:

AstraZeneca Pharmaceuticals LP
c/o MedImmune, LLC
One MedImmune Way
Gaithersburg, MD 20878
Attn: Cory Matthews / Global Real Estate

With a copy to:

AstraZeneca Pharmaceuticals LP
1800 Concord Pike
Wilmington, DE 19803
Attn: General Counsel

with a copy to:

Burton Winnick, Esquire
McCarter & English, LLP
265 Franklin Street
Boston, MA 02110

12C. Landlord's Address for Payment of Rent:

AstraZeneca LP
c/o Transwestern
PO Box 343030
Bethesda, MD 20827-3030

13. Security Deposit: $137,714.00 in the form of a standby letter of credit. See Section 13.3.

LEASE

THIS LEASE (this "Lease"), made as of the 5th day of August, 2015, by **ASTRAZENECA PHARMACEUTICALS LIMITED PARTNERSHIP**, a Delaware limited partnership, and **MORPHIC ROCK THERAPEUTIC, INC.**, a Delaware corporation, is as follows.

W I T N E S S E T H:

ARTICLE I.
CERTAIN DEFINITIONS

In addition to the words and terms defined elsewhere in this Lease, the following words and terms shall have in this Lease the meanings set forth in this Article (whether or not underscored):

"Additional Rent" has the meaning set forth in Item 9A of the Summary of Basic Terms.

"Bankruptcy Law" means any existing or future bankruptcy, insolvency, reorganization, dissolution, liquidation or arrangement or readjustment of debt law or any similar existing or future law of any applicable jurisdiction, or any laws amendatory thereof or supplemental thereto, including, without limitation, the United States Bankruptcy Code of 1978, as amended (11 U.S.C. Section 101 et seq.), as any or all of the foregoing may be amended or supplemented from time to time.

"Base Rent" has the meaning set forth in Item 8 of the Summary of Basic Terms.

"Broker" has the meaning set forth in Item 11 of the Summary of Basic Terms.

"Building" means the interconnected office and laboratory buildings located on Landlord's Property and shown on the Site Plan.

"Business Hours" means Monday through Friday, 8:00 a.m. to 6:00 p.m. and Saturdays 8:00 a.m. to 1:00 a.m., except holidays. The term "holiday" means the federal day of celebration of the following holidays: New Year's Day, Martin Luther King Day, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving, Christmas and any other weekday on which banks in the City of Boston, Massachusetts, are closed or required to be closed.

"Common Areas" means all areas of Landlord's Property, as designated by Landlord from time to time, located inside or outside of the Building, which are not intended for the use of a single tenant and which are intended for (i) the non-exclusive common use of Landlord, Tenant and other tenants of portions of Landlord's Property and their respective employees, agents, licensees and invitees and/or (ii) to serve the Building and/or Landlord's Property. Common Areas include, without limitation, the lobby of the Building, common restroom facilities and stairwells of the Building, sidewalks, unreserved Parking Areas, access drives, landscaped areas, utility rooms, storage rooms, and utility lines and systems and the Common Facilities.

"Common Facilities" means those facilities located on Landlord's Property which Landlord designates from time to time as "common facilities", including, but not limited to, building systems, passenger elevators, materials dumb-waiters, pipes, ducts, wires, conduits, meters, HVAC equipment and systems, electrical systems and equipment and plumbing lines and facilities, cafeteria, showers, conference rooms, auditorium and video/telephone conferencing meeting facilities.

"Environmental Law" means the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §9601 et seq., the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq., the Hazardous Materials Transportation Act, 49 U.S.C. §1802 et seq., the Toxic Substances Control Act, 15 U.S.C. §2601 et seq., the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq., the Clean Water Act, 33 U.S.C. §1321 et seq., the Clean Air Act, 42 U.S.C. §7401 et seq., the Massachusetts Oil and Hazardous Material Release Prevention and Response Act, Chapter 21E of the Massachusetts General Laws, all regulations promulgated thereunder, and any other federal, state, county, municipal, local or other statute, law, ordinance or regulation (including any state or local board of health rules, regulation, or code), or any common law (including common law that may impose strict liability or liability based on negligence), which may relate to or deal with human health, the environment, natural resources, or Hazardous Materials, all as may be from time to time amended or modified.

"Event of Default" has the meaning given in Section 12.1.

"Extension Term" has the meaning given in Section 2.4(b).

"Generic Drug" means (i) a drug product that is comparable to brand/reference listed drug product in dosage form, strength, route of administration, quality and performance characteristics, and intended use, (ii) any drug manufactured, marketed or sold under its chemical name without advertising and/or (iii) any drug manufactured, marketed or sold under an Adopted Name assigned by the United States Adopted Names Council.

"Hazardous Materials" or "Hazardous Substances" means, at any time, (a) any "hazardous substance" as defined in §101(14) of CERCLA (42 U.S.C. §9601(14)) or regulations promulgated thereunder; (b) any "solid waste," "hazardous waste," or "infectious waste," as such terms are defined in any Environmental Law at such time; (c) asbestos, urea-formaldehyde, polychlorinated biphenyls ("PCBs"), bio-medical materials or waste, nuclear fuel or material, chemical waste, radioactive material, explosives, known carcinogens, petroleum products and by-products and other dangerous, toxic or hazardous pollutants, contaminants, chemicals, materials or substances which may be hazardous to human or animal health or the environment or which are listed or identified in, or regulated by, any Environmental Law; and (d) any additional substances or materials which at such time are classified or considered to be hazardous or toxic under any Environmental Law.

"Initial Term" means the period beginning at 12:01 a.m. on the Term Commencement Date and ending at 11:59 p.m. on the last day of the fifth (5th) Lease Year following the Rent Commencement Date.

"Insurance Costs" includes the cost of insuring the entire Landlord's Property, including without limitation the buildings and improvements now or hereafter situated thereon, and all operations conducted in connection therewith, with such policies, coverages and companies and in such limits as may be reasonably selected by Landlord in light of the practices of similarly situated commercial landlords of comparable properties in the City of Waltham, Massachusetts (and/or which may be required by Landlord's lenders), including, but not limited to, fire insurance with extended or with all-risk coverage, comprehensive general liability (including products liability) insurance covering personal injury, deaths and property damage with a personal injury endorsement covering false arrest, detention or imprisonment, malicious prosecution, libel and slander, and wrongful entry or eviction, rent loss or business interruption insurance earthquake insurance, Ordinance and Law insurance, terrorism insurance, worker's compensation insurance, plate glass insurance, contractual liability insurance, boiler insurance, and fidelity bonds. Insurance Costs shall not include any property insurance carried by Landlord with respect to equipment used exclusively by Landlord at the Building for Landlord's pharmaceutical business operations or commercial general liability insurance for Landlord's pharmaceutical business operations at the Landlord's Property.

"Invitees" means employees, workers, visitors, guests, customers, suppliers, agents, contractors, representatives, licensees and other invitees.

"Land" means the land located at 35 Gatehouse Drive, Waltham, Massachusetts more particularly described in Exhibit A and which is depicted on the Site Plan.

"Landlord" means AstraZeneca Pharmaceuticals Limited Partnership, its successors and assigns.

"Landlord's Property" means the Land, the Building and all present or future appurtenances and/or improvements to the Land and/or the Building.

"Leasable Square Footage of the Building" has the meaning set forth in Item 3D of the Summary of Basic Terms.

"Leasable Square Footage of the Premises" has the meaning set forth in Item 3C of the Summary of Basic Terms.

"Lease Term" means the Initial Term and, if Tenant timely and properly exercises its right to extend pursuant to Section 2.4(b), the Extension Term(s).

"Legal Requirements" means all applicable laws, statutes, rules, regulations and requirements of governmental authorities, including, but not limited to, zoning laws, building codes and the Americans with Disabilities Act of 1990 and any amendments thereto, regulations and ordinances in connection therewith ("ADA").

"Operating Costs" means all costs, expenses and disbursements of every kind and nature (except Taxes) which Landlord shall pay or become obligated to pay in connection with owning, operating, managing, insuring, maintaining, repairing or replacing Landlord's Property, all as reasonably and in good faith determined by Landlord. For purposes of determining the Operating Costs, for any calendar year for which the Building is less than 95% occupied, the

Operating Costs for such calendar year which vary with occupancy shall be equitably adjusted to reflect the amount they would have been if the Building had been 95% occupied for such calendar year. In no event shall the provisions of this section entitle Landlord to collect from Tenant more than Tenant's Share of 100% of Operating Costs actually incurred. Operating Costs shall include, by way of illustration, but not be limited to: all Insurance Costs; all charges payable by Landlord in connection with the performance of Landlord's maintenance and repair obligations with respect to Landlord's Property; all charges payable by Landlord to provide janitorial service to Landlord's Property; all charges payable by Landlord to provide heating, ventilating and air conditioning services to the Building; all charges payable by Landlord to provide utility services to Landlord's Property (except Tenant's Electricity Costs or other similar electricity charges payable by other tenants); all costs related to trash, debris and refuse removal; all costs related to removal of snow and ice; all costs of pest and vermin control for the Common Areas; all costs of providing, maintaining, repairing and replacing of paving, curbs, walkways, landscaping, planters, roofs, walls, drainage, utility lines, security systems and other equipment; all costs of painting the exterior and Common Areas of the Building; all costs of repaving, resurfacing and restriping Parking Areas and drives; all costs of lighting, cleaning, waterproofing, repairing and maintaining Common Areas, Common Facilities and other portions of Landlord's Property; the net cost to Landlord of providing food service as provided in Section 6.1(h); all costs of licenses, permits and inspection fees; all legal, accounting, inspection and consulting fees related to Landlord's Property that are not specifically excluded herein; all costs of capital repairs and replacements to the Building or Common Areas, amortized over their expected useful life based upon and including a market rate of interest not to exceed eight percent (8%) per annum (subject to the limitation described below); all costs of wages, salaries and benefits of operating personnel, including welfare, retirement, vacations and other compensation and fringe benefits and payroll taxes for employees at or below the level of Building manager (provided that if any employee performs services in connection with the Building and other buildings, costs associated with such employee shall be proportionately included in Operating Costs based on the percentage of time such employee spends in connection with the operation, maintenance and management of the Building); management fees equal to 3% of gross rental revenues derived from Landlord's Property (which management fees may be payable to an affiliate of Landlord); and all materials and supplies, including charges for telephone, overnight courier, postage, stationery, supplies and other materials and expenses required for the routine operation of the management office. However, notwithstanding the above, the following specific items shall not be included: (a) the cost of alterations to space in the Building leased to others (as well as space occupied by Landlord for purposes other than Building management); (b) debt service and ground rent payments; (c) any cost or expenditure for which Landlord is entitled to reimbursement by insurance proceeds or eminent domain proceeds, whether or not Landlord is actually reimbursed; (d) costs for which Landlord is entitled to reimbursement under warranties provided to Landlord by contractors who have warranty obligations, whether or not Landlord is actually reimbursed; (e) costs in connection with leasing space in Landlord's Property, including brokerage commissions, lease concessions, rental abatements and construction allowances granted to specific tenants, attorneys' fees and collection costs related to negotiation and enforcement of tenant leases; (f) the cost of providing electrical service (lights and plugs) to space leased to tenants; (g) expenses which are billed directly, or reasonably allocable exclusively, to any tenant of the Building; (h) salaries and bonuses other than as expressly included in Operating Costs as set forth above; (i) the cost of any

work or service performed on an extra-cost basis for any tenant of the Building; (j) capital expenditures, except for the amortization of capital expenditures (over their expected useful life based upon and including a market rate of interest not to exceed eight percent (8%) per annum) which (1) are required by laws which first become effective or applicable to Landlord's Property after the Term Commencement Date, (2) are reasonably projected to achieve a savings in total Operating Costs over the Lease Term; or (3) are for repair or replacement of existing elements of Landlord's Property; (k) the cost of any additions or improvements to the Building or Landlord's Property; (l) depreciation, other than the amortization of capital improvements hereafter made as provided above; (m) costs incurred in connection with the sale, financing or refinancing of Landlord's Property; (n) fines, costs, interest and/or penalties incurred due to the late payment of Taxes or Operating Costs, or any failure of Landlord to timely pay any obligation; (o) organizational expenses associated with the creation and operation of the entity that constitutes Landlord (as distinguished from the costs of Building operations) including, but not limited to, Landlord's or Landlord's property manager's general corporate overhead or general administrative expenses; (p) advertising and promotional costs including tenant relation programs and events; (q) Landlord's gross receipts taxes, personal and corporate income taxes, inheritance and estate taxes, other business taxes and assessments, franchise, gift and transfer taxes; (r) any costs, fees, dues, contributions or similar expenses for political, charitable, industry association or similar organizations; (s) costs incurred in connection with the original design and construction of the Building or Landlord's Property, and the repair of damage to the Building or Landlord's Property in connection with any type of casualty, event of damage or destruction or condemnation (other than the amount of any deductible payable by Landlord under any property insurance policy on Landlord's Property, which amount shall be included in Operating Costs); (t) costs incurred in connection with upgrading the Building or Landlord's Property to comply with insurance requirements, or life safety codes, ordinances, statutes, or other laws in effect and applicable to Landlord's Property prior to the Term Commencement Date, including without limitation the ADA, including penalties or damages incurred as a result of non-compliance; (u) reserves of any kind; (v) any penalties or damages that Landlord pays to Tenant under this Lease or to other tenants of Landlord's Property under their respective leases; (w) any costs, fines, interest or penalties incurred due to late payments or violations by Landlord of any governmental rule or authority; (x) legal fees, accountant fees and other expenses incurred in disputes with other former, current or future tenants or occupants of Landlord's Property, or associated with the enforcement of any other leases of space in the Landlord's Property, or the defense of Landlord's title to or interest in the Building, Landlord's Property or any part thereof; (y) services or installations available to any tenant in Landlord's Property that are not also furnished to Tenant; (z) the cost of any service provided to Tenant or other occupants of Landlord's Property for which Landlord is entitled to reimbursement (other than by a general reimbursement of operating expenses), whether or not Landlord is actually reimbursed; (aa) any cost or expense that is expressly excluded from Operating Costs, or expressly provided to be incurred by Landlord at its sole cost and expense, pursuant to any provision of this Lease; (bb) any Operating Cost charged to another tenant of Landlord's Property that such tenant fails to pay; (cc) insurance premiums, or increases in insurance premiums, for any insurance required by any other tenant or occupant of Landlord's Property that is not the same as or substantially equivalent to the insurance required of Landlord under this Lease; (dd) legal, mediation, arbitration, accounting and other fees and expenses incurred in disputes with the holder of any mortgage, deed of trust or other security instrument now or hereafter encumbering all or any part of

Landlord's Property; (ee) any cost or expense payable to any of Landlord's affiliates or divisions, to the extent that such cost or expense is in excess of that which would be charged by an unaffiliated person or firm for the same service in Waltham, Massachusetts; (ff) costs incurred by Landlord in connection with correction of defects in design and construction of the Building or Landlord's Property; (gg) any cost or expense related to removal, cleaning, abatement or remediation of Hazardous Material in or about the Landlord's Property, including without limitation, Hazardous Substances in the ground water or soil that are not the responsibility of Tenant under this Lease; (hh) any cost or expense occasioned by or resulting from any violation of law by any other tenant or occupant of Landlord's Property or their respective Invitees, or by any person or entity other than Tenant or Tenant's Invitees; (ii) any bad debt loss, rent loss, or reserves (including, without limitation, any reserves for bad debts or rent loss); (jj) contributions to reserves for Operating Costs, including reserves for capital improvements (whether or not otherwise allocable under this Lease); and (kk) contributions to political or charitable organizations. For purposes of determining exclusions from Operating Costs, Landlord shall be deemed to be a tenant or occupant of the Building, and all portions of the Leasable Square Footage of the Building where Landlord conducts its pharmaceuticals business operations to the exclusion of other tenants and occupants of the Property shall be deemed to be tenant space.

"Parking Areas" means those portions of Landlord's Property which may be used for parking as depicted on the Site Plan, as such areas may be changed by Landlord from time to time. The Parking Areas presently consist of the Parking Garage and the surface parking areas as depicted on the Site Plan. The Parking Areas will not be changed to materially and adversely impact Tenant's ingress and egress or to materially increase the distance from the Parking Areas to the Premises.

"Permitted Transferee" means (a) an entity controlling, controlled by or under common control with Tenant (a "Tenant Affiliate"), (b) an entity which succeeds to Tenant's business by merger, consolidation or other form of corporate reorganization or (c) an entity which acquires all or substantially all of Tenant's assets or stock; provided that an entity may not become a Permitted Transferee through or as a part of a bankruptcy or other similar insolvency proceeding. The foregoing notwithstanding, under no circumstances shall any Permitted Transferee use the Premises for uses related to the Generic Drug business of any nature or description including, without limitation, the manufacture, development, sales, distribution or marketing of such products.

"Permitted Use" has the meaning set forth in Item 6 of the Summary of Basic Terms.

"Person" means any individual, partnership, joint venture, trust, limited liability company, business trust, joint stock company, unincorporated association, corporation, institution or entity, including any governmental authority.

"Premises" has the meaning set forth in Item 3A of the Summary of Basic Terms.

"Rent Commencement Date" means the date that is one hundred twenty (120) days following the Term Commencement Date.

"Rules and Regulations" means the rules and regulations promulgated by Landlord with respect to Landlord's Property, a copy of which is attached hereto as Exhibit D, as the same may be reasonably and in good faith modified by Landlord in a non-discriminatory manner from time to time upon notice to Tenant.

"Site Plan" means the site plan of Landlord's Property attached hereto as Exhibit B which depicts the approximate size and layout of the Land, the Building and the Parking Areas.

"Specified Number" means twenty-eight (28), subject to the provisions of Section 2.3, based on a parking ratio of 2.5 spaces per 1,000 leasable square feet of the Premises.

"Summary of Basic Terms" means the Summary of Basic Terms which is affixed to this Lease immediately after the table of contents of this Lease.

"Tax Fiscal Year" means July 1 through June 30 next following, or such other tax period as may be established by law for the payment of Taxes.

"Taxes" means (a) all taxes, assessments, betterments, water or sewer entrance fees and charges including general, special, ordinary and extraordinary, environmental, or any other charges (including charges for the use of municipal services if billed separately from other taxes), levied, assessed or imposed at any time by any governmental authority upon or against the Land, the Building, or the fixtures, signs and other improvements thereon then included in Landlord's Property and (b) all attorneys' fees, appraisal fees and other fees, charges, costs and/or expenses incurred in connection with any proceedings related to an attempt to reduce the amount of the Taxes, change the tax classification and/or reduce the assessed value of Landlord's Property, provided that such proceedings are reasonably projected to achieve a savings in total Taxes (taking into account the costs of the proceedings) over the Lease Term. This definition of Taxes is based upon the present system of real estate taxation in the Commonwealth of Massachusetts; if taxes upon rentals or any other basis shall be substituted, in whole or in part, for the present ad valorem real estate taxes, the term "Taxes" shall be deemed changed to the extent to which there is such a substitution for the present ad valorem real estate taxes. Taxes shall not include (i) any net income, capital, stock, succession, transfer, franchise, gift, estate or inheritance tax, except to the extent that such tax shall be imposed in lieu of any portion of Taxes; (ii) any item to the extent otherwise included in Operating Costs; (iii) interest and/or penalties incurred as a result of Landlord's late payment of any Taxes; and (iv) any Taxes payable on fixtures and equipment of Landlord that are not available for the common use of all tenants.

"Tenant" means Morphic Rock Therapeutic, Inc., a Delaware corporation, its permitted successors and permitted assigns.

"Tenant Improvement Allowance" has the meaning set forth in Item 4 of the Summary of Basic Terms.

"Tenant's Electricity Costs" has the meaning set forth in Item 9D of the Summary of Basic Terms.

"Tenant's Share" means 3.75%, being the amount (expressed as a percentage) equal to (a) the Leasable Square Footage of the Premises divided by (b) the Leasable Square Footage of the Building (rounded to the nearest one-hundredth of one percent (0.01%).

"Term Commencement Date" means the earlier of August 15, 2015 or the date Tenant commences its initial occupancy of the Premises for the active conduct of its business.

ARTICLE II.
LEASE OF PREMISES

Section 2.1 Lease of the Premises.

Landlord hereby leases the Premises to Tenant, and Tenant hereby leases the Premises from Landlord, upon and subject to the terms and provisions of this Lease and all zoning ordinances, and easements, restrictions and conditions of record. Subject to all applicable Legal Requirements and Rules and Regulations, Tenant shall have access to the Premises on a seven days per week, 24 hours per day basis during the Lease Term, subject to closure where necessary or appropriate for maintenance, cleaning and repairs and those matters which are beyond Landlord's reasonable control, including but not limited to, acts of God, accidents, breakdowns, war, civil commotion, fire or other casualty, labor difficulties, governmental regulations or orders and weather conditions. In the event that it is necessary for Landlord to close the Premises for maintenance, cleaning or repairs, Landlord shall limit the closure to the minimum duration necessary to accomplish the applicable maintenance, cleaning and repairs. Except in the event of emergency Landlord shall give Tenant not less than 72 hours advance written notice of any such closure.

Section 2.2 Common Rights. The Premises are leased subject to, and with the benefit of, the non-exclusive right to use in common with others at any time entitled thereto the Common Areas and Common Facilities for all such purposes as such areas may be reasonably designated, but only in connection with the use of the Premises for the Permitted Use in accordance with the Rules and Regulations. Landlord shall have the right from time to time to designate or change the locations, size or configuration of the Common Areas, and to modify or replace the Common Facilities, and to permit expansion of construction and new construction therein; provided, however, such changes shall not have a material adverse impact on Tenant's access to, or use and enjoyment of, the Premises. Tenant shall not have the right to use those portions of the Common Areas designated from time to time by Landlord as for the exclusive use of one or more other tenants. Included herein is the right to use the Common Area conference center and conference rooms when not otherwise booked by the Landlord or others also entitled to use same, which use by Tenant shall be subject to Landlord's allocation of such availability among such parties in Landlord's reasonable discretion.

Section 2.3 Parking. Subject to the Rules and Regulations, Tenant's Invitees are authorized to park not more than the Specified Number of passenger automobiles, at any time, in the unreserved Parking Areas in common with Landlord and other tenants of Landlord's Property from time to time, on

a first come, first served basis. Tenant acknowledges that not all of the Specified Number of spaces are located on Landlord's Property and agrees that, in order to use the full amount of the Specified Number, Tenant will be required to utilize spaces in the Parking Garage. In the event of a change in the Leasable Square Footage of the Premises, the Specified Number shall be adjusted pursuant to the formula used to calculate the Specified Number as of the date of the Lease. Tenant shall not (a) permit any Invitees of Tenant (other than visitors and guests) to park in spaces designated as "visitor" spaces, (b) permit any Invitees of Tenant to park in spaces designated as "reserved" spaces (unless reserved for Tenant), (c) permit the total number of passenger automobiles parked in the Parking Areas by Invitees of Tenant, at any time, to exceed the Specified Number, and (d) except for delivery trucks using designated loading and unloading facilities, permit any Invitee of Tenant to park any vehicle in the Parking Areas other than passenger automobiles. Landlord may, from time to time, designate one or more spaces as reserved for the exclusive use of one or more of the tenants and/or for Landlord's Invitees, provided the same shall not materially and adversely affect Tenant's parking rights hereunder. Subject to the Rules and Regulations, Tenant shall have non-exclusive access to two (2) loading docks located in Building E, Level 0, and to the loading dock of the main building (A00).

Section 2.4 Lease Term.

(a) The Lease Term shall commence at 12:01 a.m. on the Term Commencement Date and, unless Tenant timely and properly exercises its right to extend pursuant to Section 2.4(b) or this Lease terminates early, shall end at 11:59 p.m. on the last day of the fifth (5^{th}) Lease Year following the Rent Commencement Date. Provided Tenant has delivered to Landlord evidence of the insurance required under this Lease, Tenant shall have full access to the Premises upon the full execution of this Lease for the installation of telecommunications and computer systems, equipment, furnishings and other personal property. Notwithstanding such access, the Initial Term shall not commence until the Term Commencement Date.

(b) Provided that an Event of Default does not then exist, Tenant shall have the right to extend the Lease Term for one (1) period of three (3) years (the "Extension Term") by giving Landlord written notice specifying such extension, which notice must be received by Landlord not less than twelve (12) months prior to the expiration date of the Initial Term. If such extension becomes effective, the Lease Term shall be automatically extended upon the same terms and conditions as are applicable to the Initial Term, except that (x) Base Rent for the applicable Extension Term shall be as set forth in Item 8 of the Summary of Basic Terms and (y) there shall be no further right to extend or renew beyond the first Extension Term.

Section 2.5 Lease Amendment. If, pursuant to any provision of this Lease, there is a change in any of the terms or amounts in the Summary of Basic Terms (including, without limitation, the Leasable Square Footage of the Building, the Leasable Square Footage of the Premises, Base Rent, or Tenant's Share) then in effect, Landlord and Tenant will promptly execute a written amendment to, and restatement of, the Summary of Basic Terms, substituting the changed (or confirmed) terms and

recomputed amounts in lieu of each of the applicable terms and amounts then in effect which have been changed. As of the effective date of the amendment to the Summary of Basic Terms, the changed terms (and recomputed amounts) will be effective for all purposes of this Lease, and the amended and restated Summary of Basic Terms will be a part of, and incorporated into, this Lease.

Section 2.6 Landlord's Equipment

During the Lease Term, Tenant shall have a license to use, at no additional cost to Tenant, Landlord's Equipment. Landlord shall provide Tenant with nine (9) additional vent hoods (which vent hoods shall be part of Landlord's Equipment) for Tenant to install in the Premises at Tenant's sole expense. Tenant takes the Landlord's Equipment in "AS IS" condition, and Landlord does not warrant or make any representation, express or implied, concerning the condition, adequacy or sufficiency for Tenant's present or future purposes of the Landlord's Equipment. Landlord shall perform any maintenance, repairs or restoration that may be required to the Landlord's Equipment during the Lease Term, and Tenant shall reimburse Landlord for all costs in connection therewith within thirty (30) days following receipt of Landlord invoice. Tenant shall return the Landlord's Equipment upon the expiration or earlier termination of this Lease in the same condition as of the Term Commencement Date, ordinary wear and tear and damage by fire or other casualty excepted. Under no circumstances shall Tenant remove any of Landlord's Equipment from the Premises.

Section 2.7 Back-up Generator.

Tenant shall be permitted to connect its equipment located in the Premises to the back-up generator equipment serving the Building (the "Back-up Generator"), at no additional cost to Tenant, by plugging such equipment into the red electrical outlets currently located in the Premises (the "Back-up Generator Outlets"). Tenant's use of such Back-Up Generator Outlets shall be at the sole risk and hazard of Tenant and Landlord does not warrant or make any representation, express or implied, concerning the condition, adequacy or sufficiency for Tenant's present or future purposes of the Back-up Generator Outlets and/or Back-up Generator.

Section 2.8 Right of First Offer.

Subject to the provisions of this Section 2.8, Tenant shall have a one-time right of first offer (the "Right of First Offer") on the then-available portions of Floor 1 of Building A (each, a "ROFO Space") upon the following terms and conditions. This Right of First Offer is subject and subordinate to (i) the rights of third parties existing as of the date of this Lease, (ii) the rights, if any, of each tenant in such ROFO Space granted in the Initial Lease-Up (as defined below) with respect to a ROFO Space, and (iii) the right of Landlord or any affiliate of Landlord to use or occupy such ROFO Space.

Landlord will notify Tenant of its plans to market a ROFO Space (the "ROFO Notice") for lease to any party unrelated to Landlord (it being acknowledged and agreed that the Right of First Offer shall not be applicable to space Landlord intends to occupy and/or provide to affiliates of Landlord), which ROFO Notice shall specify the location and square footage for such ROFO Space, Landlord's estimate of the fair market rent for such ROFO Space, the date of

availability of such ROFO Space and all other material terms and conditions which will apply to such ROFO Space. The term of any ROFO Space shall be coterminous with the Lease Term for the Premises; provided, however, that in the event less than thirty (30) full calendar months remain in the Lease Term as of the date of availability of such ROFO Space, then (i) if the Extension Term has not yet been exercised, Tenant's exercise of such Right of First Offer shall be subject to Tenant's simultaneous exercise of the Extension Term (which shall thereupon be applicable to such ROFO Space) and (ii) if no Extension Term remains or is exercisable by Tenant, then this Section 2.8 shall be of no force or effect and Tenant shall have no further Rights of First Offer. Within ten (10) Business Days following its receipt of any ROFO Notice, Tenant shall have the right to accept the same by written notice to Landlord (the "ROFO Acceptance Notice"), provided that if Tenant disputes Landlord's estimate of the fair market rent in the ROFO Acceptance Notice, the fair market rent for such space shall be determined as set forth in Section 4.7 below. If Tenant timely delivers a ROFO Acceptance Notice, Landlord and Tenant shall execute an amendment to the Lease incorporating the ROFO Space into the Premises upon the terms contained in the ROFO Notice within ten (10) Business Days following Landlord's delivery to Tenant of a form therefor (and if the Landlord's determination of fair market rent was disputed in the ROFO Notice and not agreed to as of the commencement of the term for such ROFO Space, then rent shall be Landlord's determination of fair market rent until the finalization of the fair market rent appraisal, and any change in such rent amount shall be adjusted — with applicable credits or reimbursement for any underpayment or overpayment - thereafter).

If Tenant fails to timely deliver a ROFO Acceptance Notice within said ten (10) Business Day period or fails to execute Landlord's form of amendment for such ROFO Space within ten (10) Business Days of receipt from Landlord, Tenant shall be deemed to have waived its rights with respect to a ROFO Space and Landlord shall be entitled, but not required, to lease all or any portion of such ROFO Space to any party or parties on such terms and conditions, including, without limitation, options to extend the term of such lease and/or expand the premises under such lease, and for such rent as Landlord determines, all in its sole discretion, and the Right of First Offer with respect to such ROFO Space in such ROFO Notice shall be of no further force or effect.

Notwithstanding any contrary provision of this Lease, any Right of First Offer, and any exercise by Tenant of any Right of First Offer shall be void and of no effect unless on the date Tenant timely delivers a ROFO Acceptance Notice to Landlord and on the commencement date of the amendment for a ROFO Space (as applicable): (i) this Lease is in full force and effect, (ii) no Event of Default has occurred under this Lease which remains continuing and uncured after any applicable notice and opportunity to cure and (iii) except with respect to a Permitted Transfer, Tenant shall not have assigned this Lease and there shall not be any sublease or subleases then in effect.

Tenant acknowledges and agrees that Tenant's Right of First Offer with respect to any space that is not subject to a third-party lease on the date hereof (the "Vacant Space") shall not be of any force or effect until such time as such Vacant Space has been initially leased to a third-party tenant after the date hereof (the "Initial Lease-Up") and such lease (and any rights held by such tenant in any part of the Building consisting of a ROFO Space) has subsequently expired.

ARTICLE III.
CONDITION OF PREMISES; CONSTRUCTION OF INITIAL IMPROVEMENTS; ALLOWANCE

Section 3.1 Condition of Premises. Notwithstanding anything to the contrary herein contained, Tenant shall take the Premises "as-is", in the condition in which the Premises are in as of the Term Commencement Date, without any obligation on the part of Landlord to prepare or construct the Premises for Tenant's occupancy, and without any representation or warranty by Landlord to Tenant as to the condition of the Premises or the Building except as set forth in the next sentence. Notwithstanding the foregoing Landlord represents that the roof and all structural elements of the Building and all utility and building service systems located in the Building on the Term Commencement Date shall be in good working order and condition for use of the Premises as office, research and development and laboratory space on the Term Commencement Date.

Section 3.2 Tenant's Work; Landlord's Contribution. **NOT APPLICABLE**

Section 3.3 Plans and Specifications. Tenant shall be solely responsible for the preparation of the final architectural, electrical and mechanical construction drawings, plans and specifications (called "**plans**") necessary for Tenant to construct the Premises for Tenant's occupancy, which plans shall be subject to approval by Landlord's architect and engineers and shall comply with their reasonable requirements to avoid aesthetic or other conflicts with the design and function of the balance of the Building. Landlord's approval is solely given for the benefit of Landlord, and neither Tenant nor any third party shall have the right to rely upon Landlord's approval of Tenant's plans for any purpose whatsoever other than that Landlord does not object thereto under this Lease. Landlord's architects and engineers shall respond (with approval or disapproval) to any plan submission by Tenant within 8 business days after Landlord's receipt thereof. If Landlord fails to respond to any such submission within such 8 business day period, which failure continues for more than 2 business days after Tenant gives Landlord a written notice (the "Deemed Approved Notice") advising Landlord that such plan submission shall be deemed approved within 2 business days of Landlord's receipt of the Deemed Approved Notice, then such plan submission shall be deemed approved hereunder. The Deemed Approved Notice shall, in order to be effective, contain on the first page thereof, in a font at least twice as large as the font of any other text contained in such notice, a legend substantially as follows: "FAILURE TO RESPOND TO THIS NOTICE WITHIN TWO (2) BUSINESS DAYS AFTER RECEIPT HEREOF SHALL CONSTITUTE LANDLORD'S APPROVAL OF SUBMITTED PLANS." In the event Landlord's architect's or engineers' approval of Tenant's plans is withheld or conditioned, Landlord shall send prompt written notification thereof to Tenant and include a reasonably detailed statement identifying the reasons for such refusal or condition, and Tenant shall promptly have the plans revised by its architect to incorporate all reasonable objections and conditions presented by Landlord and shall resubmit such plans to Landlord. Landlord's architects and engineers shall respond (with approval or disapproval) to any plan re-submission by Tenant within 8 business days after Landlord's receipt thereof. Such process shall be followed until the plans shall have been approved by Landlord's architect and engineers without

unreasonable objection or condition. Without limiting the foregoing, Tenant shall be responsible for all elements of the design of Tenant's plans (including, without limitation, compliance with law, functionality of design, the structural integrity of the design, the configuration of the Premises and the placement of Tenant's furniture, appliances and equipment), and Landlord's approval of Tenant's plans shall in no event relieve Tenant of the responsibility for such design. Tenant agrees it shall be solely responsible for the timely preparation and submission of all such plans and for all elements of the design of such plans and for all costs related thereto. (The word "**architect**" as used in this Section 3.2 shall include an interior designer or space planner.) Tenant shall reimburse Landlord Landlord's reasonable out-of-pocket expense incurred in connection with the review of Tenant's plans.

Section 3.4 Signs. Tenant may not erect or keep any sign which is visible from the exterior of the Building, but Tenant may install a sign at its sole cost and expense at the entrance to the Premises subject to Landlord's reasonable approval. All signs located in the interior and/or exterior of the Building (i) shall comply with all applicable Legal Requirements and the sign criteria included in the Rules and Regulations, and (ii) and shall have been reasonably approved in writing and in advance by Landlord following submission of detailed plans and specifications by Tenant to Landlord. Tenant shall maintain its signs in good condition and repair and in accordance with Legal Requirements. At the end of the Lease Term or earlier termination of this Lease, Tenant shall promptly remove Tenant's signs, repair any damage caused by such removal, and return the affected portions of the Building to their condition existing prior to installation of the signs. Tenant shall be identified in the Building directory in the Building's common lobby and with directional signage at the entry of the Building at Landlord's cost and, at Tenant's cost, on the sign board at the entrance to the complex which includes the Building and Premises.

ARTICLE IV.
BASE RENT; ADDITIONAL RENT

Section 4.1 Base Rent.

(a) Tenant shall pay Base Rent commencing on the Rent Commencement Date at the rate set forth in Item 8 of the Summary of Basic Terms.

(b) Base Rent shall be payable in equal monthly installments of 1/12th of the annual Base Rent then in effect and shall be paid without offset for any reason except as otherwise expressly provided herein, in advance, on the first day of each calendar month from and after the Rent Commencement Date. Base Rent and Additional Rent shall be paid either (i) by an "electronic funds transfer" system arranged by and among Tenant, Tenant's bank and Landlord, or (ii) by check sent to Landlord's address set forth in Item 12C of the Summary of Basic Terms, or at such other place as Landlord shall from time to time designate in writing. If Tenant is using checks, rent checks shall be made payable to **AstraZeneca LP** or to such other entity as Landlord may designate from time to time in writing. The obligations of Tenant to pay Base Rent and other sums to Landlord and the obligations of Landlord under this Lease are

independent covenants and obligations. The parties acknowledge and agree that the obligations owing by Tenant under this Section 4.1 are rent reserved under this Lease, for all purposes hereunder, and are rent reserved within the meaning of Section 502(b)(6) of the Bankruptcy Code or any successor provision thereto.

Section 4.2 Certain Additional Rent. From and after the Term Commencement Date Tenant shall pay to Landlord, without offset for any reason, all Additional Rent when due. If Tenant fails to pay any Additional Rent, Landlord shall have all the rights and remedies for failure to pay Base Rent. The parties acknowledge and agree that the obligations owing by Tenant under this Section 4.2 are rent reserved under this Lease, for all purposes hereunder, and are rent reserved within the meaning of Section 502(b)(6) of the Bankruptcy Code or any successor provision thereto.

Section 4.3 Taxes.

(a) Tenant shall pay to Landlord, as Additional Rent, an amount equal to Tenant's Tax Escalation. Tenant's Tax Escalation shall be estimated in good faith by Landlord at the beginning of each Tax Fiscal Year, and thereafter be payable to Landlord in equal estimated monthly installments together with the payment of Base Rent, subject to readjustment when the actual amount of Taxes is determined. After readjustment, any shortage shall be due and payable by Tenant within 30 days of demand by Landlord and any excess shall be credited against future Base Rent and Additional Rent obligations, or refunded if the Lease Term has ended or terminated early and Tenant has no further rent or surrender obligations to Landlord. If the taxing authority provides an estimated tax bill, then monthly installments of Taxes shall be based thereon until the final tax bill is ascertained. Landlord shall furnish to Tenant, upon Tenant's request, but not more than once in any year, a copy of the tax bill or any estimated tax bill.

(b) If, after Tenant shall have made any payment under this Section 4.3, Landlord shall receive a refund of any portion of the Taxes paid on account of any Tax Fiscal Year in which such payments shall have been made as a result of an abatement of such Taxes, by final determination of legal proceedings, settlement or otherwise, Landlord shall, within 30 days after receiving the refund, pay to Tenant (unless an Event of Default has occurred) an amount equal to (i) the lesser of (A) Tenant's Tax Escalation payments for such Tax Fiscal Year or (B) Tenant's Share of the refund, which payment to Tenant shall be appropriately adjusted if Tenant's Tax Escalation covered a shorter period than covered by the refund, less (ii) Tenant's Share of all reasonable expenses incurred by Landlord in connection with such proceedings (including, but not limited to, reasonable attorneys' fees, costs and appraisers' fees), with Tenant's Share being pro-rated for any partial Tax Fiscal Year at the beginning or end of the Term. Landlord shall have sole control of all tax abatement proceedings.

(c) Tenant's obligation in respect of Taxes shall be prorated at the beginning and end of the Lease Term. If the final tax bill for the Tax Fiscal Year in which such expiration or termination of this Lease occurs shall not have been received by Landlord, then within 30 days after the receipt of the tax bill for such Tax Fiscal Year, Landlord and Tenant shall make appropriate adjustments of estimated payments.

(d) Without limiting the generality of the foregoing, Tenant shall pay all rent and personal property taxes attributable to its signs or any other personal property including but not limited to its trade fixtures, the existing or any future floor coverings, wall treatments and light fixtures in the Premises.

(e) Landlord may bring proceedings to contest the validity of the amount of any Taxes or to recover payment therefor. Tenant shall reasonably cooperate with Landlord in connection with such proceedings and shall pay to Landlord Tenant's Share of all reasonable costs, fees and expenses of such proceedings promptly upon being billed therefor, with Tenant's Share being pro-rated for any partial Tax Fiscal Year at the beginning or end of the Term. Any refund, rebate, credit or abatement of Taxes shall be equitably apportioned between the parties with due regard to the duties and rights of each under this Lease, after first reimbursing the parties participating in such contest or proceedings for their aforesaid respective costs and expenses in such contest or proceeding.

Section 4.4 Operating Costs. Tenant shall pay to Landlord, as Additional Rent, an amount equal to Tenant's Operating Cost Escalation. Tenant's Operating Cost Escalation shall be estimated in good faith by Landlord at the beginning of each calendar year, and thereafter be payable in equal estimated monthly installments, together with the Base Rent, subject to readjustment from time to time, but not more frequently than once in any calendar year, as reasonably determined by Landlord and also when actual Operating Costs are determined. After a readjustment, any shortage shall be due and payable by Tenant within 30 days of demand by Landlord and any excess shall be credited against future Base Rent and Additional Rent obligations, or refunded if the Lease Term has ended and Tenant has no further rent or surrender obligations to Landlord. Upon Tenant's reasonable written request, Landlord shall provide Tenant with reasonable supporting documentation for the Operating Costs for the prior calendar year; provided that such request is received by Landlord within six months after the end of the calendar year to which such Operating Costs relate.

Section 4.5 Payment for Electricity. Landlord has installed a meter to measure the consumption of electricity by all of the tenants (including Tenant) on the floors of the Building in which the Premises are located. Tenant shall from and after the Term Commencement Date pay to Landlord, as Additional Rent, within 30 days of demand from time to time, but not more frequently than monthly, for its consumption of electricity, a sum equal to its pro rata share of such electrical costs (which shall be at Landlord's cost and without mark-up), which pro rata share shall be based on a ratio, the numerator of which is the area of the portion of the Premises subject to each such common meter and the denominator of which is the aggregate area occupied by tenants (including space occupied by Landlord as a tenant of the Building) on the floor of the Building in which such portion of the Premises is located sharing such common meter. The rate to be paid by Tenant for electricity shall exclude the costs incurred by Landlord in maintaining or replacing electrical meters, sub-meters or check-meters, but shall include any taxes or other charges imposed on the Landlord in connection with such electrical service. In the event Landlord installs a check-meter to measure the consumption of electricity by Tenant in any portion of the Premises, Tenant shall

pay to Landlord, as Additional Rent, on demand from time to time, but not more frequently than monthly, for its consumption of electricity as measured by such check-meter.

Section 4.6 Tenant's Audit Rights. Annually, within 120 days after the end of each calendar year or Tax Fiscal Year, as applicable, Landlord shall furnish to Tenant a report setting forth in reasonable detail the Operating Costs and Taxes for the immediately preceding calendar year (in the case of Operating Costs) or Tax Fiscal Year (in the case of Taxes). Tenant shall have the right to audit Landlord's books and records relating to Operating Costs and/or Taxes with respect to the period covered by each such report within six months after receipt of such report (such six month period being called the "Audit Period") by delivering a notice of its intention to perform such audit to Landlord. If, as a result of such audit, Tenant believes that it is entitled to receive a refund of any Additional Rent paid by Tenant in respect of Operating Costs and/or Taxes, Tenant shall deliver to Landlord, no later than 30 days after expiration of the Audit Period, a notice demanding such a refund, together with a statement of the grounds for each such demand and the amount of each proposed refund. The cost of any such audit shall be paid by Tenant, except that, if it is established that the Additional Rent in respect of Operating Costs or Taxes, as applicable, charged to Tenant for the period in question was overstated by more than 3%, the reasonable out-of-pocket cost of such audit paid to a third party other than an employee of Tenant shall be paid or reimbursed to Tenant by Landlord. Provided that Landlord has complied with Section 4.3(b) or Section 4.3(e), as the case may be, an overstatement for the purposes of allocation of audit costs shall not be deemed to exist due to a refund of Taxes. Any audit shall be performed by either (a) Tenant's or Tenant's Affiliates regular employees or (b) a reputable certified public accountant reasonably acceptable to Landlord whose compensation is not contingent on the results of the audit. As a condition of Tenant's right to audit under this Section 4.6, Tenant agrees, and shall cause any outside auditor retained by Tenant to agree, to maintain the confidentiality of the results of the audit, subject to the right to disclose such results in any legal proceedings regarding the accuracy of the charges for Additional Rent in respect of Operating Costs or Taxes. If Landlord determines that a report previously furnished by Landlord was in error, Landlord may furnish a corrective or supplemental report to Tenant within six (6) months after the original report was furnished, and if such corrective or supplemental report results in increased Additional Rent, the Audit Period for the year covered by such report shall be extended for six months after Landlord furnishes the corrective or supplemental report.

Section 4.7 Determination of Fair Market Rent.

"Fair Market Rent" shall mean (a) with respect to the Extension Term, the anticipated rent for the Premises for the Extension Term as of the commencement of the Extension Term under market conditions then existing and (b) with respect to a ROFO Space, the anticipated rent for the ROFO Space as of the commencement of the term for such ROFO Space under market conditions then existing.

With respect to the Extension Term, provided that Tenant timely delivers written notice that it is exercising its option to extend the term of the Lease, Landlord shall notify Tenant of Landlord's estimate of the Fair Market Rent no later than the date that is eleven (11) calendar months prior to the expiration of the initial term of the Lease. No later than fifteen (15) days

after such notification, Tenant may dispute Landlord's estimate of Fair Market Rent upon written notice thereof to Landlord which written notice shall contain Tenant's estimate of the Fair Market Rent (the "Extension Term FMV Dispute Notice").

If Tenant disputes Landlord's estimate of Fair Market Rent, then the Fair Market Rent shall be determined by agreement between Landlord and Tenant during the next thirty (30) day period (the "Discussion Period") following Tenant's delivery of an Extension Term FMV Dispute Notice or a ROFO Acceptance Notice which disputes Landlord's estimate of the fair market rent for a ROFO Space, as applicable.

If Landlord and Tenant are unable to agree upon the Fair Market Rent during the Discussion Period, then the Fair Market Rent shall thereafter be determined by the determination of a board of three (3) M.A.I. appraisers as hereafter provided, each of whom shall have at least five (5) years' experience in the Waltham biotech rental market and each of whom is hereinafter referred to as "appraiser", Tenant and Landlord shall each appoint one such appraiser and the two appraisers so appointed shall appoint the third appraiser (the "Neutral Appraiser"). The cost and expenses of each appraiser appointed separately by Tenant and Landlord shall be borne by the party who appointed the appraiser. The cost and expenses of the third appraiser shall be shared equally by Tenant and Landlord. Landlord and Tenant shall appoint their respective appraisers no later than fifteen (15) days after the expiration of the Discussion Period and shall designate the appraisers so appointed by notice to the other party. The two appraisers so appointed and designated shall appoint the Neutral Appraiser no later than thirty (30) days after the end of the Discussion Period and shall designate such appraiser by notice to Landlord and Tenant. The Neutral Appraiser shall then choose either the Landlord's estimate of Fair Market Rent or the Tenant's estimate of Fair Market Rent as the Fair Market Rent of the space in question as of the commencement of the Extension Term and shall notify Landlord and Tenant of its determination no later than forty-five (45) days after the end of the Discussion Period. The Fair Market Rent determined in accordance with the provisions of this Section shall be deemed binding and conclusive on Tenant and Landlord. Notwithstanding the foregoing, if either party shall fail to appoint its appraiser within the period specified above (such party referred to hereinafter as the "failing party") the other party may serve notice on the failing party requiring the failing party to appoint its appraiser within ten (10) days of the giving of such notice and if the failing party shall not respond by appointment of its appraiser within said (10) day period, then the appraiser appointed by the other party shall be the sole appraiser whose choice of either the Landlord's or the Tenant's estimate of Fair Market Rent shall be binding and conclusive upon Tenant and Landlord. All times set forth herein are of the essence.

ARTICLE V.
USE OF PREMISES

Section 5.1 Permitted Use. Tenant shall not use or occupy the Premises for any purpose other than the Permitted Use.

Section 5.2 Restrictions on Use. Tenant shall use the Premises and Landlord's Equipment in a careful, safe and proper manner, shall not commit or suffer any waste on or about Landlord's Property or with respect to Landlord's Equipment, and shall not make any use of Landlord's Property and/or Landlord's Equipment which is prohibited by or contrary to any laws, rules, regulations, orders or requirements of public authorities, or which would cause a public or private nuisance. Tenant shall comply with and obey all laws, rules, regulations, orders and requirements of public authorities which in any way affect the use or operation of Landlord's Equipment and the use, operation or occupancy of Landlord's Property. Tenant, at its own expense, shall obtain any and all permits, approvals and licenses necessary for use of the Landlord's Equipment and the Premises (copies of which shall be provided to the Landlord), provided that Landlord shall be responsible for obtaining a certificate of occupancy for the Building generally (i.e., as opposed to a certificate of occupancy for the Premises after the performance of any work by Tenant, which shall be Tenant's responsibility) and any other permits, approvals and licenses necessary generally for the use of Landlord's Equipment and Landlord's Property. Tenant shall not overload the floors or other structural parts of the Building; and shall not commit or suffer any act or thing on Landlord's Property which is illegal, unreasonably offensive, unreasonably dangerous, or which unreasonably disturbs other tenants. Tenant shall not knowingly do or permit to be done any act or thing on Landlord's Property or with Landlord's Equipment which will invalidate or be in conflict with any insurance policies, or which will increase the rate of any insurance, covering the Building. If, because of Tenant's failure to comply with the provisions of this Section or due to any use of the Premises or activity of Tenant in or about Landlord's Property, the Insurance Costs are increased, Tenant shall pay Landlord the amount of such increase caused by the failure of Tenant to comply with the provisions of this Section or by the nature of Tenant's use of the Premises. Tenant shall cause any fire lanes in the front, sides and rear of the Building to be kept free of all parking associated with its business or occupancy and in compliance with all applicable regulations. Tenant shall conduct its business at all times so as not to annoy or be offensive to other tenants and occupants in Landlord's Property. Tenant shall not permit the emission of any objectionable noise or odor from the Premises and shall at its own cost install such extra sound proofing or noise control systems and odor control systems, as may be needed to eliminate unreasonable noise, vibrations and odors, if any, emanating from the Premises being heard, felt or smelled outside the Premises. Tenant shall not place any file cabinets bookcases, partitions, shelves or other furnishings or equipment in a location which abuts or blocks any windows.

Section 5.3 Hazardous Materials.

(a) Tenant shall be permitted to bring or keep in or on the Premises any Hazardous Material (hereinafter defined), so long as such Hazardous Material is specifically identified and enumerated in Tenant's Hazardous Waste Management Program (as hereafter defined and as the same may be updated by Tenant from time to time upon reasonable prior notice to and with the approval of Landlord), which are hereby expressly permitted by Landlord ("Tenant's Hazardous Materials"). Tenant's Hazardous Materials shall at all times be brought upon, kept or used in accordance with (A) all applicable Environmental Laws (hereinafter defined) and regulations or requirements of insurance rating or insurance service organizations, (B) Tenant's "Hazardous Waste Management Program," which shall be provided by Tenant to

Landlord in advance of Hazardous Materials being brought by Tenant upon the Premises for Landlord's review and approval, not to be unreasonably withheld, conditioned or delayed, and Tenant hereby acknowledges that Tenant shall be prohibited from bringing or keeping any Tenant's Hazardous Materials in or on the Premises until Landlord has approved Tenant's "Hazardous Waste Management Program" in writing, and (C) with respect to medical waste and so-called "biohazard" materials, all applicable laws and regulations and insurance regulations or requirements. Tenant shall be responsible for assuring that all laboratory uses are adequately and properly vented. Tenant's Hazardous Waste Management Program shall be updated as reasonably required by Landlord or desired by Tenant (including the list of Tenant's Hazardous Materials enumerated therein), but no less frequently than annually. Tenant's Hazardous Waste Management Program shall also specify (i) a description of handling, storage, use and disposal procedures; and (ii) all plans or disclosures and/or emergency response plans which Tenant has prepared, including without limitation Tenant's Hazardous Waste Management Plan, and all plans which Tenant is required to supply to any governmental agency or authority pursuant to any Environmental Law.

(b) Tenant, at its sole cost and expense, shall comply with (i) all applicable Environmental Laws, including but not limited to those relating to any discharge into the air, surface, water, sewers, soil or groundwater of any Tenant's Hazardous Material, whether within or outside the Premises, Building or Landlord's Property, and (ii) any applicable rules, requirements and safety procedures of the Massachusetts Department of Environmental Protection ("DEP"), the City of Waltham Fire Marshal, any other federal, state or local agencies or authorities having jurisdiction, and any insurer of the Landlord's Equipment, Landlord's Property, Building or the Premises with respect to the use, storage and disposal of any Hazardous Materials at or from the Premises. Tenant shall provide Landlord with a written inventory of all of Tenant's Hazardous Materials used or to be used in the Tenant's normal operations at the Premises, and Tenant shall update said inventory on an annual basis and upon any changes or modifications thereto.

(c) Any increase in the premium for insurance at the Landlord's Property arising from Tenant's use and/or storage of Tenant's Hazardous Materials shall be at Tenant's expense. Tenant shall procure and maintain at its sole expense such additional insurance as may be necessary to comply with any requirement of any federal, state or local government agency with jurisdiction.

(d) Tenant shall reimburse Landlord upon demand, as Additional Rent, for the reasonable costs of investigating Tenant's compliance with the provisions of this Section 5.3, within thirty (30) days after demand therefor, but only if such investigation reveals that Tenant is not in material compliance. Tenant shall execute affidavits, certifications and the like, as may be reasonably requested by Landlord from time to time concerning Tenant's actual knowledge and belief concerning the presence of Hazardous Materials in or on the Premises or the Building.

(e) Tenant hereby covenants and agrees to indemnify, defend and hold Landlord harmless from and against any and all claims against Landlord arising out of (A) the presence of Hazardous Material (which term shall include, for all purposes of this Lease, any biohazardous materials) in, under or about the Building or in Landlord's Property or transported from the Building or Landlord's Premises to the extent resulting from Tenant's use or operations,

or (B) the breach by Tenant of any of its obligations under this Section 5.3. This indemnification of the Landlord by Tenant includes, without limitation, reasonable costs incurred in connection with any investigation of site conditions or any cleanup, remedial, removal or restoration work required by any federal, state or local governmental agency or political subdivision because of Hazardous Material present in the land, soil, air or ground water on, under or about the Building or landlord's Premises resulting from Tenant's use or operations. The indemnification and hold harmless obligations of Tenant under this Section 5.3(e) shall survive the expiration or any earlier termination of this Lease. Without limiting the foregoing, if the presence of any Hazardous Material in the Building or otherwise in the Landlord's Property is caused by any of the Tenant, its agents, contractors, or employees and results in any contamination of any part of the Landlord's Property or any adjacent property, Tenant shall take all actions at Tenant's sole cost and expense as are necessary pursuant to Environmental Laws to remediate the Landlord's Property or any adjacent property to their condition as of the date of this Lease, provided that Tenant shall first obtain Landlord's approval of such actions, which approval shall not be unreasonably withheld, conditioned or delayed so long as such actions, in Landlord's reasonable discretion, would not potentially have any adverse effect on the Landlord's Property, and, in any event, Landlord shall not withhold its approval of any proposed actions which are required by applicable Environmental Laws.

(f) Landlord represents that it has no knowledge of (i) any contamination of any portion of the Landlord's Property other than as disclosed in the environmental reports previously delivered to the Landlord; or (ii) any asserted claims by third parties relating to the presence of Hazardous Materials in the Landlord's Property.

(g) Landlord hereby covenants and agrees with Tenant to indemnify, defend and hold Tenant harmless from and against any and all claims against Tenant which may arise out of (i) the release or discharge of any Hazardous Material on or about the Landlord's Property, Premises or Building by virtue of the acts of Landlord or any of its contractors, agents or invitees, and (ii) the presence of the Hazardous Materials located at or migrating from the Landlord's Premises or Building as of the Term Commencement Date. The indemnification and hold harmless obligations of Landlord under this Section 5.3(g) shall survive the expiration or any earlier termination of this Lease with respect to occurrences during the Term.

Section 5.4 Biohazard Removal and Animal Care.

(a) Tenant shall be responsible, at its sole cost and expense, for janitorial and trash removal services and other biohazard disposal services for the Premises, including the laboratory areas thereof. Such services shall be performed by Tenant's employees or by licensed (where required by law), insured and qualified contractors and on a sufficient basis to ensure that the Building and the Landlord's Premises are at all times kept neat, clean and free of Hazardous Materials and biohazards as provided in Section 5.3. In addition, Tenant shall be responsible, at Tenant's sole cost and expense, for the care and safe storage of any animals housed within the Premises, including without limitation all animal husbandry and custodial services with respect thereto, in accordance with the highest standards and best practices applicable to Tenant's industry.

(b) No animals, animal waste, food or supplies relating to the animals maintained from time to time in the animal storage areas of the Premises shall be transported within the Building except as provided in this Section 5.4. All deliveries of animals or animal food or supplies to Tenant at the Building shall be made prior to 11:00 a.m. No transportation of animals, animal waste, food or supplies within the Building shall occur between the hours of 11:00 a.m. and 2:00 p.m. At all times that animals are transported within the Common Areas, they shall be transported in an appropriate cage or other container. At no time shall any animals, animal waste, food or supplies relating to the animals be brought into, transported through, or delivered to the lobby of the Building or be transported within the Building in elevators.

ARTICLE VI.
LANDLORD'S SERVICES

Section 6.1 Landlord's Services. Landlord shall furnish to the Building the services set forth below in this Section 6.1, subject to the conditions stated in this Lease. The cost of certain of these services are to be (i) paid by Tenant, as expressly provided in this Lease, or (ii) included in Operating Costs or Taxes, as applicable. The cost and expense of any services that are expressly provided in this Lease not (x) to be paid for by Tenant as expressly provided for in this Lease or (y) included in Operating Costs or Taxes, as applicable, shall be borne by Landlord. Except as otherwise expressly provided in this Lease, the cost of all work and services to be provided or performed by Landlord hereunder shall be included in Operating Costs.

(a) Exterior of Building and Structure. Landlord shall keep in good condition and repair the exterior and structural elements of the Building, including the roof, roof membrane and the utility lines and systems outside the Building (except to the extent those utility lines or systems are the property or responsibility of the applicable utility company).

(b) Systems. Except with respect to the performance of Tenant's obligations under Section 7.4, Landlord shall operate, maintain and repair the heating, ventilating and air conditioning system, the plumbing, sewer, drainage, electrical, fire protection, elevator, life safety and security systems and equipment and other mechanical, electrical and communications systems and equipment of the Building ("Building Systems"). Notwithstanding the foregoing, the Building Systems shall only include such commonly available systems and equipment as are present in the Building as of the Term Commencement Date and replacements thereof, and shall expressly exclude any utility or building service systems or equipment installed by or on behalf of Tenant or otherwise in connection with Tenant's operations in the Premises, all of which shall be operated, maintained, repaired, and replaced as necessary by Tenant at its sole expense. Subject to the performance of Tenant's obligations under Section 7.4, Landlord shall provide heating, ventilating, and air-conditioning services to the Premises to maintain reasonably comfortable temperatures, the cost of which shall be reimbursed by Tenant to Landlord as metered by Landlord based upon Tenant's actual usage thereof.

(c) Water and Sewer. Hot and cold water will be available for Tenant's use. Tenant shall from and after the Term Commencement Date pay to Landlord, as Additional Rent, on demand from time to time, but not more frequently than monthly, for its consumption of water

and sewer services in the Premises, a Water Service Charge. As of the date hereof the "Water Service Charge" is a sum equal to $1.48/rsf per annum (i.e. $1,377.14 per month). Landlord may from time to time have a survey made by a reputable, independent engineer or consulting firm selected by Landlord in its sole discretion to determine the cost of the water and sewer service being furnished to the Premises by Landlord. If it is determined that such cost is different from the Water Service Charge, then the Water Service Charge shall be adjusted by such difference, effective on the date recommended by such engineer or consulting firm. Any adjustment in the Water Service Charge shall be retroactive to the extent necessary. Notwithstanding the foregoing, if the rates for water and/or sewer usage charged by the applicable utility company increase during the term of this Lease, Landlord may increase the Water Service Charge accordingly effective as of the date of such increase without the necessity of a survey.

(d) Common Areas. Landlord shall provide heating and air conditioning for the Common Areas inside the Building during Business Hours. Landlord shall clean, provide lighting, repair, maintain and provide janitorial services for the Common Areas including, to the extent reasonable, the Parking Areas, in order to maintain the Common Areas. Landlord shall make any alterations or improvements as are necessary to cause the Common Areas to be in substantial compliance with all Legal Requirements. Notwithstanding the above, any damage to the Common Areas or Common Facilities caused by any Invitee of Tenant shall be the sole responsibility of Tenant.

(e) Waste Removal. Landlord shall provide or arrange for ordinary and reasonable waste removal services for the Building. In the event that Landlord reasonably determines that Tenant's quantity of waste is excessive in comparison to other tenants of the Building, or, in the event that Landlord determines that Tenant's waste is other than waste generated by typical office use, Landlord may bill Tenant directly as Additional Rent for any such additional cost therefor or require that Tenant be responsible for disposing of its own waste. Tenant shall be responsible for and pay for its own laboratory waste removal and office cleaning.

(f) Taxes. Landlord shall pay all Taxes levied upon or with respect to Landlord's Property.

(g) Insurance. Landlord shall procure and maintain in full force and effect fire, casualty and extended coverage insurance with respect to the Building, with vandalism and malicious mischief endorsements, liability insurance with respect to the Common Areas, business automotive, rent loss insurance and such other insurance upon or with respect to Landlord's Property as Landlord reasonably determines to be necessary, appropriate and/or desirable or is required by Landlord's lender, all with such limits of coverage and deductibles as Landlord or Landlord's lender may deem reasonably necessary, appropriate and/or desirable, which insurance coverage and amounts shall be commercially reasonable in light of the practices of similarly situated commercial landlords of comparable properties in the City of Waltham, Massachusetts.

(h) Food Service. Landlord shall cause food service to be provided (directly or through outside vendors) during Business Hours for tenants of the Building within a portion of the Common Areas of the Building for use by tenants of the Building and others permitted to use

such facilities by Landlord. Landlord shall have the right to terminate the food service if it no longer is economically viable in the Landlord's sole and exclusive judgment.

Section 6.2 Extraordinary Use. Tenant acknowledges that, for the purposes of computer use in the Premises, the electrical and HVAC services to be supplied by Landlord to the Premises will be sufficient only for computer use for general office purposes (and not for data centers, server farms or any similar computing equipment requiring high-demand power and cooling). Any additional capacity or structural support, as reasonably determined by Landlord, needed for computers, data processing or heat-generating machines or other equipment required for computer use beyond ordinary office uses, shall be subject to Landlord's prior written approval, which approval shall be in Landlord's reasonable discretion, and all such equipment shall be installed and maintained at Tenant's sole expense.

Section 6.3 Interruption; Delay. Landlord shall have no responsibility or liability for failure or interruption of any such repairs or services referred to in this Article VI, or for any interruption in utility services, caused by breakage, accident, strikes, repairs, inability after exercise of reasonable diligence to obtain supplies or otherwise furnish services, or for any cause or causes beyond the reasonable control of Landlord (any or all of the foregoing being a "Service Interruption") (but Landlord, in respect of those matters for which Landlord is responsible, will use reasonable efforts to restore such services or make such repairs as soon as possible), nor in any event for any indirect or consequential damages; and failure or omission on the part of Landlord to furnish such service or make such repair shall not be construed as an eviction of Tenant, nor render Landlord liable in damages, nor entitle Tenant to an abatement of Base Rent or Additional Rent, nor release Tenant from the obligation to fulfill any of its covenants under this Lease, except as provided in Articles X and XI with respect to eminent domain and damage by fire or other casualty. Notwithstanding the foregoing, if the Premises, or a material portion thereof, is made untenantable or inaccessible, and Tenant actually ceases to use the Premises or such portion, for more than five consecutive business days after written notice from Tenant to Landlord as a result of any Service Interruption not caused by Tenant, then Tenant shall be entitled to receive an abatement of Base Rent and Additional Rent payable hereunder for the period beginning on the fifth consecutive business day of such Service Interruption and ending on the day the service is restored; provided that if such a Service Interruption renders less than the entire Premises untenantable or inaccessible, the amount of Base Rent and Additional Rent abated shall be prorated in proportion to the percentage of the rentable square footage of the Premises that is rendered untenantable or inaccessible. The foregoing right shall not apply if the Service Interruption is due to casualty. In any event, Landlord shall take all commercially reasonable steps to provide alternative power, utility services, HVAC, electrical, plumbing and other services to the Premises, including, but not limited to, providing generators and other temporary services at the Landlord's sole cost and expense if such Service Interruption was caused by Landlord or Landlord's employees, agents, contractors or invitees.

Section 6.4 Additional Services. Should Tenant request any additional services, or services beyond the noted hours for such services, Tenant agrees to pay to Landlord as Additional Rent therefor Landlord's actual costs for providing such service, plus an additional 5% as an administrative fee, within 30 days of Landlord's billing Tenant therefor.

Section 6.5 Landlord Indemnity. Landlord will exonerate, indemnify, defend, save and hold harmless Tenant from and against all claims, proceedings, defenses thereof, liabilities, costs, and expenses of any kind and nature, including reasonable legal fees, expenses and costs, arising from (i) any injury to person or damage to property to the extent caused by the negligence or misconduct of Landlord or Landlord's agents, employees or contractors, or (ii) any breach by Landlord of any representation, covenant or other term contained in this Lease, whether occurring before, during, or after the expiration of the Lease Term. The provisions of this Section shall survive the expiration or earlier termination of the Lease Term.

Section 6.6 Compliance with Laws. Landlord shall cause the Building (other than portions for which such compliance is the responsibility of the party leasing such space) and the Common Areas to comply with all Legal Requirements. Such obligation of Landlord shall include, but not be limited to, the correction of any violations with respect to the Common Areas that arise out of or in connection with any claims brought under any provision of the Americans with Disabilities Act as amended from time to time. As of the date hereof, Landlord has not received notice from any governmental agencies that the Landlord's Property, Common Areas or Premises are in violation of Legal Requirements, and Landlord shall be responsible for correcting any such violations existing as of the Term Commencement Date.

ARTICLE VII.
CERTAIN OBLIGATIONS OF TENANT

Section 7.1 Rent. Tenant will promptly pay the Base Rent and Additional Rent, including without limitation any and all fees, charges, expenses, fines, assessments or other sums payable by Tenant to Landlord (or to the applicable provider of utilities) at the time and in the manner provided for in this Lease, all of which shall be deemed to be obligations to pay Base Rent or Additional Rent.

Section 7.2 Utilities. Tenant shall pay Tenant's Electricity Costs in accordance with Section 4.5. With respect to utilities other than electric for which the Premises are separately metered or submetered, Tenant shall pay bills directly to the utility provider prior to their due dates if Tenant is billed directly by the utility provider, or Tenant shall pay the charges therefor to Landlord as Additional Rent within 30 days of Landlord's billing therefor. With respect to utilities other than electric for which the Premises are not separately metered or submetered, Tenant shall pay for usage as a part of the Operating Costs. Tenant agrees that its use of electric current shall never

exceed the capacity of existing feeders, risers and wiring installations in the Building. Tenant shall not make or perform any alterations to wiring, installations, lighting fixtures or other electrical facilities in any manner without the prior written consent of Landlord, which consent shall not be unreasonably withheld, delayed, or conditioned. Any risers or wiring to meet Tenant's excess electrical requirements, if requested by Tenant and approved by Landlord, will be installed by Landlord at Tenant's expense.

Section 7.3 No Waste. Tenant shall not overload, damage or deface the Premises nor shall it suffer or permit the same to be done, nor shall it commit any waste.

Section 7.4 Maintenance; Repairs; and Yield Up. Subject to Landlord's maintenance and repair obligations and the limitations set forth below, Tenant shall keep the Premises neat and clean and maintain the same in good repair and condition; Tenant's obligation to so maintain and repair the Premises shall apply to all of the Premises, including, without limitation, all doors, glass, fixtures, interior walls, floors, ceilings, HVAC equipment, telephone and data equipment, lighting, plumbing and lab equipment and any other systems (other than common Building Systems) exclusively serving the Premises. There is excepted from Tenant's obligations under this Section 7.4 only (a) damage to such portions of the Premises not the responsibility of Tenant under this Lease and originally constructed by Landlord as is caused by those hazards which are covered by the policies of insurance carried by Landlord with respect to Landlord's Property, (b) repair of damage caused by Landlord except to the extent covered by Tenant's property insurance, and (c) repairs and work which are otherwise the specific responsibility of Landlord hereunder. Upon the expiration or other termination of the term hereof, Tenant shall (i) peaceably quit and surrender to Landlord the Premises in the condition required by the other provisions of this Lease; (ii) remove any and all Hazardous Materials from the Premises (other than any Hazardous Materials in the Premises on the Term Commencement Date or, except for such introduction requested by Tenant or required under this Lease, introduced by Landlord or those claiming under Landlord) and all of Tenant's Property; (iii) deliver to Landlord a certification from a licensed, insured, and qualified industrial hygienist certifying that the Premises do not contain any Hazardous Materials other than any Hazardous Materials in the Premises on the Term Commencement Date or, except for such introduction requested by Tenant or required under this Lease, introduced by Landlord or those claiming under Landlord; (iv) repair any damages to the Premises or the Building caused by the installation or removal of alterations or Tenant's property; and (v) decommission all laboratory lines, systems, and equipment in accordance with applicable industry standards. Tenant's obligations under the preceding sentence shall survive the expiration or earlier termination of this Lease for a period of eighteen (18) months. Failure to perform such removal and restoration on or before the expiration or earlier termination of the Term hereof shall constitute a holding over by Tenant subject to the terms of Section 13.9 hereof. Tenant shall cause all maintenance and repair work to conform to applicable governmental laws, rules, regulations, orders and requirements of public authorities. Tenant shall keep the Premises clear of all filth, trash and refuse. If Tenant fails to perform Tenant's obligations under the above provisions of this Section, then Landlord will have the right (but not the obligation), without waiving any default by Tenant, to cause such obligations to be performed upon not less than three days prior written

notice to Tenant (or a shorter period of prior written notice, or a contemporaneous written notice, if appropriate in Landlord's judgment in light of the nature of Tenant's obligations to be performed), and if Landlord causes any of such obligations to be performed, the costs and expenses reasonably incurred by Landlord in connection therewith shall be due and payable by Tenant to Landlord as Additional Rent upon demand.

Section 7.5 Alterations by Tenant. Tenant will not make any change in, or addition to, the Premises without first obtaining, on each occasion, Landlord's consent in writing, not to be unreasonably withheld, and then only at Tenant's expense (other than with respect to the Tenant Improvement Allowance, if applicable), and in a lawful manner and upon such terms and conditions as Landlord, by such writing, shall approve, which shall include, without limitation, (a) maintenance of insurance reasonably satisfactory to Landlord and (b) compliance with Sections 7.9 and 7.11. Notwithstanding the foregoing, the prior written consent of Landlord will not be required for non-structural interior alterations that do not affect any of the utility or building service systems or equipment in the Building (other than such utilities and systems that are located within and exclusively serve the Premises) and that cost less than $10,000.00 for any single project; provided, however, that Tenant shall notify Landlord of the performance of any such work and provide Landlord copies of any plans and specifications therefor that have been produced by or for the benefit of Tenant. Any such alteration or addition shall be consistent in appearance with the rest of the Building and Landlord's Property and shall be made only after duly obtaining (and providing to Landlord copies of) all required permits and licenses from all governmental authorities. Tenant will deliver to Landlord in writing a schedule setting forth the details and location of all such proposed alterations or additions and detailed plans and specifications. The contractor(s) performing the work shall be subject to Landlord's reasonable approval. All approved repairs, installations, alterations, additions or other improvements made by Tenant shall be made in a good and workmanlike manner, between such hours as approved in writing by Landlord, which approval shall not be unreasonably withheld, delayed, or conditioned, and in such a way that utilities will not be unnecessarily interrupted and other tenants and occupants of the Building will not suffer unreasonable inconvenience or interference as reasonably determined by Landlord. Tenant's Invitees shall be given such reasonable access to other portions of the Building and the mechanical systems as may be necessary or appropriate to perform such work. Both during and after the performance of any such work, Landlord shall have free access to any and all mechanical installations in the Premises that constitute part of the Building service systems and equipment (i.e., as opposed to Tenant's laboratory equipment), including, but not limited to, air conditioning, fans, ventilating systems, machine rooms and electrical closets; and Tenant agrees not to construct or permit the installation of partitions and/or other obstructions in the Premises which might interfere with Landlord's free access to the Premises or Building, or impede the free flow of air to and from air vents and other portions of the heating, ventilating and air conditioning systems in the Building. All installations, alterations, additions or improvements in or to the Premises shall be the property of Landlord and shall remain upon, and be surrendered with, the Premises at the end of the Lease Term or sooner termination of this Lease, except to the extent that Landlord, by written notice to Tenant given simultaneously with the approval of the plans and specifications for any such work, requires Tenant to remove any of the same at the expiration or earlier termination of this Lease, all of which items so designated

shall be removed by Tenant at its expense and Tenant shall repair any damage to the Landlord's Property and Landlord's Equipment caused by the installation or removal of any such item.

Section 7.6 Trade Fixtures and Equipment. Any trade fixtures installed in, or attached to, the Premises by, and at the expense of, Tenant, shall remain the property of Tenant, if the same may be removed without material damage to, or destruction of, the Premises. Tenant shall have the right, at any time and from time to time during the Lease Term, to remove any and all of its trade fixtures, which it may have installed in, or attached to, the Premises. In addition, at the end of the Lease Term or sooner termination of this Lease, Tenant shall remove all of Tenant's trade fixtures unless Landlord gives Tenant a written waiver for same. At any time that Tenant removes any of its trade fixtures, Tenant shall promptly repair Landlord's Property and Landlord's Equipment as a result of any damage to, or destruction of, Landlord's Property and/or Landlord's Equipment caused by the installation or removal of any of its trade fixtures.

Section 7.7 Compliance with Laws. Subject to Section 6.6 and/or Landlord's obligation to obtain a certificate of occupancy for the Building as provided in Section 5.2 above and any other permits, approvals and licenses necessary generally for the use of Landlord's Property and Landlord's Equipment, Tenant, in its use of the Premises and at its sole expense, shall comply with all applicable laws, orders and regulations of Federal, State, County and Town authorities, and with any direction of any public officer or officers, pursuant to law, including, without limitation, all Legal Requirements related to the use, storage, discharge, release, removal or existence of Hazardous Materials and for all applicable Export Control and sanctions regulations. Tenant shall maintain the Premises and Landlord's Equipment in a sanitary and safe condition in accordance with all applicable Federal and State laws and the by laws, rules, regulations and ordinances of the City of Waltham, and in accordance with all directions, rules and regulations of the Health Officer, Fire Marshall, Building Inspector and other proper officers of the governmental agencies having jurisdiction thereover.

Section 7.8 Contents at Tenant's Risk. All inventory, equipment, goods, merchandise, furniture, fixtures and property of every kind which may be on or about the Premises (other than Landlord's Equipment and Landlord's Furniture) shall be at the sole risk and hazard of Tenant, and if the whole or any part thereof shall be destroyed or damaged by windstorm, vandalism, and malicious mischief and such other hazards as are included in so-called extended all-risk coverage, including but not limited to fire, water or otherwise, or by the use or abuse of water or by the leaking or bursting of water pipes, or by rising water, or by roof or other structural leak, or by loss of electrical service, or in any other way or manner, no part of such loss or damage shall be charged to or borne by Landlord in any case whatsoever, except that to the extent required by applicable Massachusetts law, the foregoing shall not exculpate Landlord from its own negligent acts or omissions or willful misconduct. Tenant agrees to maintain property insurance written on an All Risk or Special Perils Form, with coverage for broad form water damage, including earthquake sprinkler leakage, at the full replacement cost value of the insured property and with a replacement cost

endorsement covering all of Tenant's business and trade fixtures, equipment, furniture, merchandise and other personal property within the Premises; and from and after the commencement date of this Lease and throughout the remainder of the term hereof rent or business interruption insurance against loss resulting from fire, or other risks covered by broad form extended coverage endorsement, in an amount equal to the then current base annual rent and additional rents for the Premises for at least a one year period, with loss payable under such policy to Landlord, and Tenant shall indemnify and save harmless Landlord from any loss, cost, expense, damage or liability resulting from Tenant's failure to have such insurance as required in this Lease. Such insurance on Tenant's property shall contain a waiver of subrogation clause in favor of Landlord.

Such policies are to be written for terms of not less than one year by a company having a general policy holder's rating of not less than A and a rating in financial size of not less than XI, as rated in the most current "Best's" insurance reports, and authorized and licensed to issue such policies in the Commonwealth of Massachusetts. Any such insurance required of Tenant hereunder may be furnished by Tenant under any blanket policy carried by it, providing the policy strictly complies with all other terms and conditions contained in this Lease, and provided further that such policy: (x) identifies with specificity the particular address of the premises being covered under the blanket policy; (y) provides a minimum guaranteed coverage amount for the Premises as required pursuant to the terms of this Article; and (z) expressly waives any pro rata distribution requirement contained in Tenant's blanket policy covering the Premises. Each policy evidencing insurance as required to be carried by Tenant pursuant to this Article shall contain the following provisions and/or clauses: (i) a cross-liability clause; (ii) a provision that such policy and the coverage carried by Landlord shall be excess insurance; (iii) a provision including Landlord, Landlord's managing agent, and other parties (including mortgagees) designated by Landlord as additional insureds (except with respect to workers' compensation insurance); (iv) a waiver by the insurer of any right of subrogation against Landlord, its agents, employees and representatives which arises or might arise by reason of any payment under such policy or by reasons of any act or omission of Landlord, its agents, employees, or representatives; (v) a severability clause; and (vi) a provision that the insurer will endeavor to provide 30 days' notice of cancelation. An Evidence of Insurance (in form ACORD 27, or such other form acceptable to Landlord) for each of the insurance policies Tenant is required to carry in compliance with its obligations under this Lease, and containing provisions specified herein, shall be delivered to Landlord prior to the Term Commencement Date, and, upon renewals, prior to the expiration of such coverage. Upon Tenant's default in obtaining or delivering any such policy or policies or failure to pay the premiums therefor, Landlord (in addition to and not in limitation of its other rights, remedies and privileges by reason thereof) may, but shall not be obligated to, secure or pay the premium for any such policy or policies and charge Tenant as Additional Rent therefor an amount equal to 110% of the costs incurred by Landlord thereby. Insurance notifications may arrive by regular mail.

Section 7.9 Exoneration; Indemnification and Insurance. Tenant will exonerate, indemnify, defend, save and hold harmless Landlord (and any and all Persons claiming by, through or under Landlord) from and against all claims, proceedings, defenses thereof, liabilities, costs, and expenses of any kind and nature, including reasonable legal fees, arising from: (i) any breach of this Lease by Tenant or any Invitee of

Tenant or other Person claiming by, through or under Tenant; (ii) any occurrence within the Premises, except to the extent the same results from the negligence or willful misconduct of Landlord, its agents, contractors, or employees; and/or (iii) any act, omission or negligence of any Invitee of Tenant, or arising from any accident, injury or damage occurring in, on or about Landlord's Property, which such accident, damage or injury results from the negligence or misconduct on the part of any Invitee of Tenant. This exoneration, indemnification and hold harmless agreement shall survive the termination of this Lease.

From and after the Term Commencement Date and thereafter during the Lease Term and any period of holding over, Tenant shall maintain in full force and effect the following insurance coverages:

(i) commercial general public liability insurance all on an occurrence basis with respect to the business carried on in or from the Premises and the Tenant's use and occupancy of the Premises and of any other part of the Building, with coverage for any one occurrence or claim of not less than Ten Million Dollars ($10,000,000), which insurance shall include the Landlord as an additional insured (by written endorsement delivered to the Landlord), shall contain a cross liability clause protecting the Landlord in respect of claims by the Tenant as if the Landlord were separately insured, and may be met by use of excess and/or umbrella liability insurance;

(ii) all risks property insurance in respect of fire and such other perils are from time to time in the usual extended coverage endorsement covering the Tenant's leasehold improvements or alterations (to the extent the same have not become the property of Landlord), trade fixtures, property and the furniture and equipment in the Premises for the full replacement cost thereof;

(iii) workers' compensation insurance and all such other insurance as may be required by applicable law and Employers Liability coverage with a limit of not less than One Million Dollars ($1,000,000); and

(iv) insurance against such other perils and in such amounts as the Landlord may from time to time reasonably require upon not less than ninety (90) days' written notice, such requirement to be made on the basis that the required insurance is customary at the time for prudent tenants of properties similar to the Building and for tenants in a similar business.

Each policy shall contain: (A) a waiver by the insurer of any rights of subrogation or indemnity or any other claim over to which the insurer might otherwise be entitled against the Landlord or the agents or employees of the Landlord, and (B) a cross liability clause.

In the event Tenant fails to provide evidence of insurance required to be provided by Tenant hereunder, Landlord shall be authorized (but not required) to procure such coverage in the amounts stated with all costs thereof to be chargeable to Tenant as Additional Rent, and payable by Tenant upon receipt of written invoice therefor.

Tenant shall not permit any contractor to do any work at or furnish any materials to be incorporated into the Premises without first delivering to Landlord satisfactory evidence of the

Contractor's commercial general liability insurance, worker's compensation insurance, automobile insurance and statutory lien bonds each reasonably acceptable to Landlord and complying with any insurance specifications provided by Landlord. Tenant shall also provide and pay for window and plate glass insurance with respect to the Premises (if not otherwise covered by Tenant's property insurance), and Tenant shall provide Landlord with a certificate evidencing such insurance and containing a provision that the same may not be canceled until the insurer endeavors to provide 30 days' prior written notice to Landlord and Tenant shall provide Landlord with such a certificate prior to the Term Commencement Date and thereafter prior to the expiration of any such coverage. All insurance requirements imposed upon Tenant or its contractors under this Lease shall be subject to the further requirement that the forms of coverage and the insurers providing the insurance be authorized to conduct business in the Commonwealth of Massachusetts, be in sound financial condition and carry an A-/VIII or better Best's rating. Tenant agrees that Landlord shall not be responsible or liable to Tenant, or to those Persons claiming by, through or under Tenant, for any loss or damage that may be occasioned by or through the acts or omissions of Persons occupying or using adjoining premises or any part of Landlord's Property, or otherwise, or for any loss or damage resulting to Tenant or those Persons claiming by, through or under Tenant, or its or their property, except that to the extent required by applicable Massachusetts law, the foregoing shall not exculpate Landlord from its own negligent acts or omissions or willful misconduct.

Section 7.10 Landlord's Access. Landlord and its representatives shall have the right without charge to it and without reduction in Base Rent or Additional Rent, at reasonable times, with reasonable notice, and in such manner as shall not unreasonably interfere with Tenant's business, to enter the Premises for any reasonable purpose (including, without limitation, showing the Premises to prospective purchasers, lenders and, during the last 12 months of the Lease Term, tenants) and, if Landlord so elects, to make entry for the purpose of investigating repair or maintenance problems and to make such repairs or changes as Landlord deems advisable, and to maintain, use, repair, replace, relocate or introduce pipes, ducts, wires, meters and any other Landlord's fixtures serving or to serve the Premises or other parts of Landlord's Property, or to maintain or repair any portion of Landlord's Property or Landlord's Equipment, and, in case of an emergency, whether resulting from circumstances in the Premises or elsewhere in Landlord's Property, Landlord or its representatives may enter the Premises (forcibly, if necessary) at any time to take such measures as may be needed to cope with such emergency. Such access shall include, but not be limited to, the right to open floors, walls, ceilings, and building systems for the foregoing purposes.

Section 7.11 No Liens. Tenant shall not permit any mechanics', laborers' or materialmen's liens to stand against Landlord's Property, Landlord's Equipment or Tenant's interests in the Premises, this Lease, or the estate created hereby for any labor or materials furnished to Tenant or claimed to have been furnished to Tenant in connection with work of any character performed or claimed to have been performed in or on the Premises by or at the direction or sufferance of Tenant.

Section 7.12 Compliance with Rules and Regulations. Tenant covenants that all Invitees of Tenant will comply with the Rules and Regulations. Landlord, however, shall have the reasonable right to change the Rules and Regulations and to waive any one or more of them in the case of any one or more tenants; provided that any changes or modifications to the Rules and Regulations shall be reasonable and of uniform applicability to all tenants of the Building, and provided that the Rules and Regulations will generally be enforced in a non-discriminatory manner with respect to similarly situated tenants.

ARTICLE VIII.
SUBLETTING AND ASSIGNMENT

Section 8.1 Subletting and Assignment.

(a) Except as hereinafter set forth, Tenant shall not assign, mortgage, pledge or encumber this Lease nor sublet all or any part of the Premises, nor permit or allow the use of all or any part of the Premises by any person other than Tenant and its employees, without, on each occasion, obtaining Landlord's written consent thereto. As used herein and except as expressly provided below, the term "assign" or "assignment" shall be deemed to include, without limitation: (i) any transfer of Tenant's interest in this Lease by operation of law or the merger or consolidation of Tenant with or into any other firm or corporation; or (ii) the transfer or sale of a controlling interest in Tenant.

(b) (i) Landlord will not unreasonably withhold, condition or delay its consent to any sublease of all or any part of the Premises, so long as (A) the subtenant and its proposed use is of a character consistent with the operation of a building of the same class as the Building; (B) the subtenant's proposed use is permitted under the terms of this Lease; (C) the subtenant is qualified to do business in the Commonwealth of Massachusetts and has all applicable permits and licenses to do business from the Premises; (D) Tenant pays to Landlord all of Landlord's reasonable expenses actually arising out of such sublease, including, without limitation, reasonable attorneys' fees; (E) there does not then exist an Event of Default and no Event of Default will be created as a result of the proposed sublease or the proposed use by the subtenant; (F) each of Landlord's mortgagees of Landlord's Property has consented in writing to such sublease if such mortgagee's consent is required pursuant to the terms of the applicable financing documents (and Landlord will use commercially reasonable efforts to obtain such consent); (G) the proposed sublease prohibits any assignment of the sublease or any sub-sublease of any portion of the Premises without the prior written consent of Landlord, which consent may be granted or denied in Landlord's reasonable discretion; (H) the proposed sublease will not cause Landlord to be in default under any then-existing lease, license or other occupancy agreement regarding the Landlord's Property (including without limitation pursuant to any anti-competition or prohibited use provisions therein).

(ii) Landlord will not unreasonably withhold, condition or delay its consent to an assignment of this Lease, so long as (A) the assignee and its proposed use is of a character consistent with the operation of a first class office and/or laboratory building; (B) the assignee's proposed use is permitted under the terms of this Lease; (C) the assignee is qualified

to do business in the Commonwealth of Massachusetts and has all applicable permits and licenses to do business from the Premises; (D) Tenant pays to Landlord all of Landlord's reasonable expenses actually arising out of such assignee, including, without limitation, attorneys' fees; (E) there does not then exist an Event of Default and no Event of Default will be created as a result of the proposed assignment or the proposed use by the assignee; and (F) each of Landlord's mortgagees of Landlord's Property has consented in writing to such assignment if such mortgagee's consent is required pursuant to the terms of the applicable financing documents; (G) the proposed assignment will not cause Landlord to be in default under any then-existing lease, license or other occupancy agreement regarding the Landlord's Property (including without limitation pursuant to any anti-competition or prohibited use provisions therein).

(iii) **No assignment, sublease or transfer shall be made to an individual, entity or company that will engage in Generic Drug business uses in the Premises.**

(iv) Subsections (i) and (ii) above notwithstanding, no prior written consent of the Landlord shall be required for an assignment or sublease to a Permitted Transferee on the conditions that (I) the Permitted Transferee shall not engage in Generic Drug business uses in the Premises, (II) such Permitted Transferee meets the criteria set forth in (i) above for a sublease and (ii) above with respect to an assignment, (III) Tenant delivers prior written notice of such sublease or assignment to Landlord at least ten (10) days prior to the effective date thereof together with a copy of the fully executed document effecting such sublease or assignment and (IV) with respect to an assignment occurring in connection with a merger, consolidation or other form of corporate reorganization or an acquisition of all or substantially all of Tenant's assets or stock, the net worth of such successor as of the effective date of the assignment is at least equal to the net worth of the Tenant as of the date of the Lease. Furthermore, so long as the same does not cause Tenant to violate (iii) above, neither any public offering of shares or other ownership interest in Tenant nor any private equity financing by one or more investors who regularly invest in private companies, shall be deemed an assignment for purposes of this Lease.

(c) In the event of an assignment of this Lease, Tenant shall be jointly and severally liable with the new tenant for the payment of any and all Base Rent and Additional Rent which may become due by the terms of this Lease and for the performance of all covenants, agreements and conditions on the part of Tenant to be performed hereunder. If the sublease or assignment is to a party other than a Permitted Transferee, Tenant shall also pay to Landlord 50% of the amount, if any, by which the rent received as a result of the assignment or sublease exceeds the rent payable hereunder on a per square foot basis after deducting the actual direct out-of-pocket costs which are (x) incurred by Tenant for leasing commissions, architectural and/or engineering fees, legal fees, additional tenant improvements paid in connection with such assignment or sublease, tenant improvement allowances, reimbursement obligations or costs incurred in constructing tenant improvements in connection with such sublease or assignment, free rent and/or any other consideration paid or provided by Tenant to the proposed transferee, which shall be depreciated on a straight line basis over the term of the proposed Transfer, and (y) documented to Landlord's reasonable satisfaction by invoices, contracts, canceled checks and the like, such costs to be amortized on a straight-line basis over the then remaining term of this Lease. No such assignment or sublease shall be valid or effective unless and until (i) the new

tenant and Tenant execute and deliver to Landlord an agreement, in such form as Landlord may reasonably prescribe, pursuant to which, inter alia, such new tenant (A) assumes all of the obligations of Tenant under this Lease accruing from and after the effective date of the assignment if such transaction is an assignment of this Lease, (B) agrees to execute and deliver such estoppel certificates and subordination agreements as may be reasonably required by Landlord, (C) if a sublease, acknowledges that Landlord has no obligations to the subtenant under this Lease, the sublease or otherwise, and (D) agrees to maintain the same insurance coverages as the insurance coverages which Tenant is required to maintain under this Lease and to provide evidence thereof satisfactory to Landlord when requested; and (ii) the new tenant delivers to Landlord evidence, in form and substance satisfactory to Landlord, of the insurance coverages required to be maintained by such new tenant under the agreement referenced in clause (i) above. No modification of the terms of this Lease or any course of dealing between Landlord and any assignee or sublessee of Tenant's interest herein shall operate to release or impair Tenant's obligations hereunder.

(d) In the event that Tenant seeks Landlord's consent to an assignment of this Lease other than to a Permitted Transferee or a sublease of 50% or more of the Premises other than to a Permitted Transferee, Landlord, at its option, may terminate this Lease (or if the request is for a sublease of less than all of the Premises, but for all of the remaining term, at Landlord's option, Landlord may terminate this Lease as to the portion requested to be sublet and Landlord and Tenant shall execute an amendment to this Lease to modify the Premises and to adjust Base Rent and Tenant's Share based upon the approximate remaining leasable square footage to the Leasable Square Footage of the Building); provided that if Landlord exercises such option, Tenant may, by written notice given to Landlord within five days after Landlord gives Tenant written notice of exercise of such option, defeat such exercise by withdrawing the request for Landlord's consent to the proposed assignment or sublease and terminating the proposed assignment or sublease. In the event of any such termination, Landlord may enter into a new lease with the proposed assignee or sublessee or any other party on any terms and provisions acceptable to Landlord in Landlord's sole discretion for the Premises or the portion of the Premises released from this Lease

(e) Tenant shall not enter into any arrangements with any subtenant or assignee to circumvent, or which have the effect of circumventing any provisions of this Article VIII.

ARTICLE IX.
RIGHTS OF MORTGAGEES AND GROUND LESSORS; ESTOPPEL CERTIFICATES

Section 9.1 Subordination to Mortgages and Ground Leases. Landlord represents that, as of the date of this Lease, no mortgage encumbers all or any part of Landlord's Property. Tenant agrees that this Lease shall be subordinate to the lien of any future mortgage or mortgages, or ground lease, upon Landlord's Property, irrespective of the time of execution or time of recording of any such mortgage or mortgages, or ground lease, and to all renewals, extensions, and modifications therefor or amendments thereto provided that holder of the mortgage or landlord under the ground lease agrees not to disturb Tenant's possession of the Premises and to recognize Tenant's rights under this Lease so as Tenant is not

in default beyond applicable notice and cure periods of Tenant's obligations under this Lease. Tenant agrees that it will, upon five (5) business days' advance written request from Landlord or any holder of a mortgage on all or a portion of Landlord's Property or the ground lessor thereof, execute, acknowledge, and deliver any and all commercially reasonable instruments reasonably deemed necessary or desirable by Landlord, or such holder to give effect to, or notice of, such subordination.

Section 9.2 Lease Superior at Mortgagee's or Ground Lessor's Election. At the request in writing of any mortgagee, or ground lessor, of Landlord's Property, this Lease shall be deemed superior to such mortgage, or ground lease, whether this Lease was executed before or after such mortgage, or ground lease, and Tenant shall execute such documents to effect the foregoing in recordable form as such mortgagee, or ground lessor, shall reasonably request.

Section 9.3 Notice to Mortgagee and Ground Lessor. Upon receipt of a written request from Landlord or any holder of a mortgage, on all or any part of Landlord's Property, or the ground lessor thereof, Tenant will thereafter send any such holder copies of all notices of default or termination given by Tenant to Landlord in accordance with any provision of this Lease. In the event of any failure by Landlord to perform, fulfill or observe any agreement by Landlord herein or any breach by Landlord of any representation or warranty of Landlord herein, any such holder may at its election cure such failure or breach for and on behalf of Landlord within the time provided herein for Landlord to cure the same.

Section 9.4 Limitations on Obligations of Mortgagees, Ground Lessors and Successors. Tenant agrees that the holder of a mortgage or ground lease or any successor-in-interest to any of them or to Landlord shall not be: (a) bound by any payment of an installment of Base Rent or Additional Rent which may have been made more than 30 days before the due date of such installment; (b) bound by any amendment or modification to this Lease made without the consent of the holder of a mortgage or ground lease or such successor in interest (to the extent such consent is required by such mortgage, ground lease or documents executed by Landlord and/or Tenant in connection with the same); (c) liable for any previous act or omission of Landlord (or its predecessors in interest); (d) responsible for any monies owing by Landlord to the credit of Tenant or subject to any credits, offsets, claims, counterclaims, demands or defenses which Tenant may have against Landlord (or any of its predecessors in interest); (e) bound by any covenant to undertake or complete any construction of the Premises or any portion thereof; or (f) obligated to make any payment to Tenant other than any security deposit actually delivered to holder of a mortgage or ground lease or such successor in interest. Further, Tenant agrees that it will not seek to terminate this Lease by reason of any act or omission of Landlord until Tenant shall have given written notice of such act or omission to the holder of such mortgage or ground lease (at such holder's last address furnished to Tenant) and following the giving of such notice such holder shall have the right, but shall not be obligated, to remedy such act or omission within 20 business days after the time period provided for in this Lease for Landlord to cure the same

or, if such cure cannot reasonably be completed with such period, such longer period as may be reasonably necessary to cure the same provided that such party commences such cure within said 20 business day period and diligently prosecutes such cure to completion; provided, however, the total period provided for such cure shall in no event exceed sixty days. Tenant shall enter into a written agreement confirming the foregoing from time to time upon written request from Landlord and/or the holder of a mortgage or ground lease on Landlord's Property.

Section 9.5 Estoppel Certificates. Each party ("Responding Party") agrees, at any time and from time to time, within ten business days after written request by the other party ("Requesting Party") or any holder of a mortgage on all or a portion of Landlord's Property or the ground lessor thereof, to execute, acknowledge and deliver to the Requesting Party a statement in writing certifying that (except as may be otherwise specified by the Responding Party): (i) this Lease is presently in full force and effect and unmodified; (ii) Tenant has accepted possession of the Premises; (iii) any improvements required by the terms of this Lease to be made by Landlord have been completed to the satisfaction of Tenant; (iv) no rent under this Lease has been paid more than 30 days in advance of its due date; (v) the addresses for notices to be sent to the Responding Party is as set forth in this Lease or as specified in such certificate; (vi) to the best of the knowledge of the Responding Party, Tenant as of the date of executing the certificate has no charge, lien or claim of offset under this Lease, or otherwise, against rents or other charges due or to become due hereunder; (vii) to the best of the knowledge of the Responding Party, the Responding Party is not in default under this Lease; and (viii) such other factual information as the Requesting Party may reasonably request about this Lease or Tenant's occupancy to the extent that the same is in the possession of the Responding Party and may be responded to without incurring any out-of-pocket costs.

ARTICLE X.
CASUALTY

Section 10.1 Damage From Casualty. If any material portion of the Premises or the Building affecting Tenant's use of the Premises is damaged by fire or other casualty, Tenant shall give Landlord written notice of such casualty promptly after Tenant becomes aware of such casualty. Within 30 days after Tenant gives Landlord written notice of such casualty, Landlord shall reasonably estimate, and give Tenant written notice of, the period commencing with the date of such notice (the "Restoration Period") that Landlord anticipates will be reasonably required to perform the restoration work which is the responsibility of Landlord as provided below. If Landlord reasonably estimates that the Restoration Period will be longer than 90 days, or if such casualty occurs during the final six (6) months of the Lease Term and Tenant does not elect to exercise a right to extend the Lease Term, if any, then either Landlord or Tenant may terminate this Lease by giving to the other written notice of termination within ten days after Landlord gives Tenant written notice of such estimate. Such notice of termination shall be effective on the date thereof, and if Tenant is then occupying the Premises, Tenant shall thereafter have a reasonable period of time in which to vacate the Premises. If (i) Landlord reasonably estimates that the Restoration Period will be 90 days or shorter, or (ii) Landlord reasonably estimates that the Restoration Period will be longer

than 90 days but neither Landlord nor Tenant exercises its right to terminate this Lease as set forth above, then this Lease shall not terminate; and in such event, Landlord shall, unless Landlord exercises its termination right pursuant to Section 10.3, with reasonable dispatch, repair or rebuild the Premises to the condition thereof as of the Term Commencement Date (subject, however, to Legal Requirements then in existence), and Tenant shall, forthwith after the completion of Landlord's Restoration Work, repair or rebuild the Premises to substantially its condition immediately before the occurrence of the casualty.

Section 10.2 Abatement of Rent. In the event that the provisions of Section 10.1 shall become applicable, the Base Rent and Additional Rent shall be abated or reduced proportionately during any period in which, by reason of any such damage or destruction, there is substantial interference with the operation of the business of Tenant in the Premises, having regard to the extent to which Tenant may be required to discontinue its business in the Premises, and such abatement or reduction shall continue (but may be adjusted from time to time based on the extent of the interference with Tenant's operations) for the period commencing with such destruction or damage and ending on the earlier to occur of (i) the date on which Tenant commences business operations in the Premises or the portion thereof affected by the casualty and (ii) the date that is 60 days after substantial completion by Landlord of the restoration work to be performed by Landlord under Section 10.1 above.

Section 10.3 Landlord's Right to Terminate. Notwithstanding the foregoing, Landlord may terminate this Lease following: (a) damage or destruction to the Building or Premises to the extent of 50% or more of the cost of replacement thereof; or (b) the refusal of the applicable insurance carrier to pay funds sufficient for the cost to repair or replace, less any applicable deductible. Landlord may exercise the right to so terminate this Lease by written notice to Tenant given within 60 days after the date of the damage or 60 days after the date Landlord receives written notice of such damage, whichever is later. Such notice of termination shall be effective on the date thereof, and if Tenant is then occupying the Premises, Tenant shall thereafter have a reasonable period of time in which to vacate the Premises.

ARTICLE XI.
EMINENT DOMAIN

Section 11.1 Eminent Domain; Right to Terminate and Abatement in Rent. If the Premises or any part thereof, or the whole or any substantial part of Landlord's Property, shall be taken, or if a conveyance shall be made in anticipation thereof, for any street or other public use, by action of the municipal, state, federal or other authorities, or shall receive any substantial direct or consequential damage for which Landlord or Tenant shall be entitled to compensation by reason of anything lawfully done in pursuance of any public authority, after the execution hereof and before the expiration of the Lease Term, then this Lease and the Lease Term shall terminate at the election of Landlord or Tenant (given by written notice to the other within 90 days of the taking or within 90 days of notice of the taking to Landlord), and such

election may be made in case of any such taking notwithstanding the entire interest of Landlord may have been divested by such taking; and if neither Landlord nor Tenant so elects, then in case of any such taking or destruction of, or damage to, the Premises, rendering the same or any part thereof unfit for use and occupation, a just proportion of the Base Rent hereinbefore reserved according to the nature and extent of the injury sustained by the Premises as reasonably determined by Landlord, shall be suspended or abated until the Premises or, in case of such taking, what may remain thereof, shall have been put in proper condition for use and occupation. To the extent that the Premises, upon having been put in proper condition for use and occupation are smaller than before such taking, the Base Rent hereinbefore reserved shall be reduced for the balance of the Lease Term in the same proportion which the reduction in space bears to the original Leasable Square Footage of the Premises. In the event of a taking of any portion of the Building, Tenant's Share shall be recomputed.

Section 11.2 Restoration. If this Lease is not terminated as provided in Section 11.1, Landlord shall apply so much of the available proceeds of the eminent domain award as are required to restore Landlord's Property and the Premises to a condition, to the extent practical, substantially the same as that immediately preceding the taking, but subject to zoning laws and building codes then in existence. If the available proceeds of the eminent domain award are insufficient, in Landlord's judgment, for that purpose, Landlord shall have no obligation to expend funds in excess of said proceeds and Landlord shall have the right to select which portions of Landlord's Property, if any, shall be restored. The term "available proceeds" means the amount of the award paid to Landlord, less cost of obtaining the same (including attorneys' fees and appraisal fees) and less the amount thereof required to be paid to a mortgagee or ground lessor.

Section 11.3 Landlord to Control Eminent Domain Action. Landlord reserves all rights to compensation for damage to the Premises or any part thereof, or the leasehold hereby created, heretofore accrued or hereafter to accrue, by reason of any taking for public use of said Premises or any portion thereof, or right appurtenant thereto, or privilege or easement in, through, under or over the same, and by way of confirmation of the foregoing Tenant hereby assigns all rights to such damages heretofore accrued or hereafter accruing during the Lease Term to Landlord. Provided, however, nothing herein contained shall limit Tenant's right to any separate award for the taking of personal property, the cost of leasehold improvements installed in the Premises by Tenant, moving expenses, or other items the payment of which shall not reduce the award payable to Landlord.

ARTICLE XII.
DEFAULT AND REMEDIES

Section 12.1 Event of Default. As used herein, "Event of Default" means the occurrence and/or existence of any one or more of the following: (a) (i) Tenant shall fail to pay any installment of Base Rent, Additional Rent or any other monetary amount due under this Lease on or before the date on which the same becomes due and payable, and such failure continues for five business days after written notice

from Landlord thereof or (ii) Landlord having given the written notice specified in the foregoing clause (i) to Tenant twice in any 12 month period, Tenant shall fail, on a third occasion within the 12 months following the giving of the first such notice by Landlord, to pay any installment of Base Rent, Additional Rent or any other monetary amount due under this Lease on or before the date on which the same becomes due and payable; or (b) Tenant shall neglect or fail to perform or observe any of the other covenants or undertakings herein on its part to be performed or observed and such neglect or failure shall continue for 30 days after written notice to Tenant; provided that if the default is other than a default under clause (a) above, or clauses (c) through (h) below, and is such that it cannot be cured within 30 days, but is capable of being cured, such 30 day period shall be extended by up to 60 additional days provided that Tenant commences to cure such default within said 30 day period, continues to do so diligently, and thereafter completes such cure within not more than 90 days following the notice of default; or (c) there is filed by Tenant any case, petition, proceeding or other action under any Bankruptcy Law; or (d) any other proceedings shall be instituted against Tenant under any Bankruptcy Law and not be dismissed within 60 days; or (e) Tenant shall execute an assignment of its property for the benefit of its creditors; or (f) a receiver, custodian or other similar officer for Tenant shall be appointed and not be discharged within 60 days; or (g) the estate hereby created shall be taken by execution or by other process of law and is not redeemed by Tenant within 60 days thereafter; or (h) an assignment or sublease in violation of the terms of this Lease.

Section 12.2 Landlord's Remedies.

(a) Upon the occurrence of an Event of Default, Landlord may, immediately or at any time thereafter (notwithstanding any license or waiver of any former breach or waiver of the benefit hereof, or consent in a former instance), and enter the Premises or any part thereof and repossess the same as of its former estate in accordance with law, or terminate this Lease by written notice to Tenant, and in either event expel Tenant and those claiming through or under it and remove their effects (forcibly, if necessary) in compliance with law without being deemed guilty of any manner of trespass and without prejudice to any remedy which might otherwise be used for arrears of Base Rent or Additional Rent or breach of covenant, and upon entry or written notice of termination, or automatic termination, both as aforesaid, this Lease shall terminate and Landlord, in addition to all other remedies which it may have at law or equity, and not in limitation thereof, shall have the remedies provided in this Article XII. No termination of this Lease and/or repossession of the Premises pursuant to this Section 12.2(a) shall relieve Tenant of its obligations under this Lease, which shall survive such termination or repossession.

(b) From the termination of this Lease pursuant to Section 12.2(a) through the remainder of the Lease Term, until such time, if any, that Landlord exercises its right pursuant to Section 12.2(c), Tenant shall pay to Landlord the Base Rent and Additional Rent in installments as and when the same become due and payable, subject to reduction by any rent and additional rent actually received by Landlord as a result of a re-letting of the Premises (net of the reasonable costs of re-letting, including remodeling costs, brokerage commissions and reasonable attorneys' fees). Landlord shall exercise commercially reasonable efforts to re-let the Premises to mitigate damages, and Landlord may re let the Premises or any part or parts thereof for a term or terms which may, at Landlord's option, be less than or exceed the period which

would otherwise have constituted the balance of the Lease Term and may grant concessions or free rent. The good faith failure of Landlord to re let the Premises or any part or parts thereof, or, if the Premises are re let, the good faith failure to collect the rents due under such re letting, shall not release or affect Tenant's liability for damage so long as Landlord does not act arbitrarily or capriciously. Any suit brought to collect the amount of deficiency for any month or other period shall not prejudice in any way the right of Landlord to collect the deficiency for any subsequent month or period by a similar proceeding. Landlord, at Landlord's option, may make such alterations, repairs, replacements and decorations to the Premises as Landlord in Landlord's sole but reasonable judgment considers advisable and necessary for the purpose of re letting the Premises, and the making of such alterations or decorations shall not operate or be construed to release Tenant from liability hereunder.

(c) At Landlord's option exercisable by written notice given to Tenant upon or after the termination of this Lease pursuant to Section 12.2(a), Tenant shall forthwith pay to Landlord as damages, in addition to all sums which were due prior to the exercise of such option by Landlord, a sum equal to the amount by which the Base Rent and Additional Rent for the remainder of the Lease Term exceeds the fair rental value of the Premises determined as of the termination date for the remainder of the Lease Term, discounted to present value at the then-applicable federal discount rate. For the purposes of computing damages payable pursuant to this Section 12.2(c), the annual Additional Rent with respect to Taxes, Insurance Costs and Operating Costs for the remainder of the Lease Term will be assumed to be such Additional Rent for the most recently ended fiscal, calendar or lease year, as the case may be.

Section 12.3 Reimbursement of Landlord. In the event of any default by Tenant in the payment of any Base Rent or Additional Rent, Tenant will, in addition to paying Landlord all amounts due under the terms and provisions of this Lease, including, without limitation, Section 12.9, reimburse Landlord for all reasonable expenses incurred by Landlord in collecting such rent or in obtaining possession of, or in re letting the Premises, or in defending any action, including expenses for reasonable counsel fees and commissions. Tenant further agrees that, if on termination of this Lease by expiration or otherwise, Tenant shall fail to remove any of its property from the Premises as provided for herein, Landlord shall be authorized, in its sole option, and in Tenant's name and on its behalf, either (a) to cause such property to be removed and placed in storage for the account and at the expense of Tenant; or (b) to sell such property at public or private sale, with or without notice, and to apply the proceeds thereof, after the payment of all expenses of removal, storage and sale, to the indebtedness, if any, of Tenant to Landlord, the surplus, if any, to be paid to Tenant; prior to the removal of such property Landlord may charge Tenant a fair rental amount for the storage of such property. All sums payable by Tenant under this Article XII shall be deemed Additional Rent.

Section 12.4 Landlord's Right to Perform Tenant's Covenants. Tenant covenants and agrees that, if it shall at any time fail to make any payment or perform any other act on its part to be made or performed as in this Lease provided, then Landlord, in its sole discretion may after due notice to, or demand upon, Tenant and subject to the limitations set forth below, make any payment or perform any other act on the part of Tenant

to be made and performed as in this Lease provided, in such manner and to such extent as Landlord may reasonably deem desirable, and in exercising any such rights, Landlord may pay necessary and incidental costs and expenses, employ counsel, and incur and pay reasonable attorneys' fees. The making of any such payment or the performing of any other act by Landlord pursuant to this Article shall not waive, or release Tenant from, any obligations of Tenant in this Lease contained. All sums so paid by Landlord and all reasonably necessary and incidental costs and expenses in connection with the performance of any such act by Landlord shall, except as otherwise in this Lease expressly provided, be payable to Landlord on demand, and Tenant covenants to pay any such sum or sums promptly, and Landlord shall have (in addition to any other right or remedy of Landlord) the same rights and remedies in the event of the non-payment thereof by Tenant as in the case of default by Tenant in the payment of the Base Rent. Whenever practicable, Landlord, before proceeding as provided in this Section 12.4, shall give Tenant notice in writing of the failure of Tenant which Landlord proposes to remedy, and shall allow Tenant such length of time as may be reasonable in the circumstances, consistent with any grace periods contained herein, but not exceeding 30 days from the giving of notice, to remedy the failure itself and, if Tenant shall not remedy the failure in the time so allowed, Landlord shall be deemed to have given "due notice" and may proceed as provided in this Section 12.4; provided that nothing in this Section shall prevent Landlord from acting without notice to Tenant in case of any emergency wherein there is danger to property or person or where there may exist any violation of legal requirements including but not limited to the presence of Hazardous Materials, in which event no notice shall be required.

Section 12.5 Cumulative Remedies. The specified remedies to which Landlord may resort under the terms of this Lease, or under the provisions of applicable law, are cumulative and not intended to be exclusive of any other remedies or means of redress to which Landlord may be lawfully entitled in case of any breach or threatened breach by Tenant of any provisions of this Lease. The failure of Landlord to insist in any one or more cases upon the strict performance of any of the covenants of this Lease or to exercise any option contained herein shall not be construed as a waiver or a relinquishment for the future of such covenant or option. Receipt by Landlord of any Base Rent or Additional Rent payment with knowledge of the breach of any covenants hereof shall not be deemed a waiver of such breach. No waiver by Landlord or Tenant of any provision of this Lease shall be deemed to have been made unless expressed in writing and signed by the waiving party. In addition to the other remedies provided in this Lease, Landlord shall be entitled to restraint by injunction of any violation or attempted or threatened violation of any of the covenants, conditions or provisions of this Lease.

Section 12.6 Expenses of Enforcement. Tenant agrees to pay all reasonable expenses and reasonable attorneys' fees incurred by Landlord in enforcing any obligation or any remedies hereunder including, without limitation, in connection with collection of Base Rent or Additional Rent, recovery by Landlord of the Premises, or in any litigation in which Landlord shall become involved by reason of any act or negligence of Tenant's Invitees or any breach of this Lease by Tenant.

Section 12.7 Landlord's Default. Landlord shall not be deemed to be in default hereunder unless such default shall remain uncured for more than 30 days following written notice from Tenant to Landlord specifying the nature of such default, or, if such cure cannot reasonably be completed within such period, such longer period as may be reasonably required to correct such default provided that Landlord commences such cure within said 30 day period and diligently prosecutes such cure to completion. In no event whatsoever shall Landlord be liable for consequential or any indirect damages. The provisions of this Section 12.7 are further subject to the provisions of Articles X and XI dealing with eminent domain and fire and other casualty.

Section 12.8 Limitation of Landlord's Liability. The obligations of Landlord hereunder shall be binding upon Landlord and each succeeding owner of Landlord's interest hereunder only during the period of such ownership, and Landlord and each succeeding owner shall have no liability whatsoever except for its obligations during each such respective period. Tenant hereby agrees for itself and each succeeding holder of Tenant's interest, or any portion thereof, hereunder, that any judgment, decree or award obtained against Landlord or any succeeding owner of Landlord's interest, which is in any manner related to this Lease, the Premises or Tenant's use and occupancy of the Premises or the Common Areas, or the remainder of Landlord's Property, whether at law or in equity, shall be satisfied out of Landlord's equity in the land and buildings then comprising Landlord's Property owned by Landlord to the extent then owned by Landlord and the proceeds from Landlord's Property and such succeeding owner, and further agrees to look only to such assets and to no other assets of Landlord, or such succeeding owner, for satisfaction. Except in the event such Person is a guarantor of Tenant's obligations under this Lease, no Person executing this Lease on behalf of Landlord or Tenant, nor any limited partner, or any officer, director, employee, member, trustee, beneficiary, or other owner of Landlord or Tenant, nor of any subsequent Landlord or Tenant shall have any personal liability hereunder. The remedies provided to Tenant in this Lease are exclusive, and Landlord will not be liable under any theory of recovery, whether based on contract, tort or otherwise.

Section 12.9 Late Payment and Administrative Expense. If Tenant shall fail to pay Base Rent, Additional Rent or other charges when due and payable under this Lease, such unpaid amounts shall bear interest from the due date thereof to the date of payment at the lesser of (a) a rate per annum equal to 3% plus the prime rate of Bank of America, N.A. (or any successor), in effect on the day the payment became due and subject to change thereafter or (b) the maximum rate permitted by applicable law. In addition, if Landlord is required to redeposit any check which is returned for insufficient funds or if Tenant shall fail to pay Base Rent, Additional Rent or other charges on or before the date on which the same become due and payable, then Tenant shall also pay to Landlord an administrative expense charge of 5% of the amount thereof. The provisions of this Section 12.9 shall not be construed to relieve Tenant of the obligation to pay Base Rent, Additional Rent and all other charges when due under this Lease and shall be in addition to and not in limitation of Landlord's other remedies as provided for in this Lease.

Section 12.10 Limitation of Tenant's Liability. Notwithstanding anything in this Lease to the contrary, except as provided in Sections 5.3, 5.4 and 13.9, in no event whatsoever shall Tenant be liable to Landlord for consequential or indirect damages arising under this Lease.

ARTICLE XIII.
MISCELLANEOUS PROVISIONS

Section 13.1 Brokers. Tenant represents that it has not dealt with any Person in connection with the Premises or the negotiation or execution of this Lease other than officers, employees and attorneys of Landlord and Brokers. Tenant shall indemnify and save harmless Landlord from and against all claims, liabilities, costs and expenses incurred as a result of any breach of the foregoing representation by Tenant. Landlord represents that it has not dealt with any Person in connection with the Premises or the negotiation or execution of this Lease other than officers, employees and attorneys of Tenant and Brokers. Landlord shall indemnify and save harmless Tenant from and against all claims, liabilities, costs and expenses incurred as a result of any breach of the foregoing representation by Landlord. The broker's fees payable to Brokers for this Lease shall be payable by Landlord subject to and in accordance with the terms of a separate agreement between Landlord and Broker, and Landlord shall indemnify, defend and hold Tenant harmless from and against any liability in connection therewith.

Section 13.2 Quiet Enjoyment. Tenant shall, so long as no Event of Default exists, peaceably and quietly have and hold the Premises without hindrance or molestation by any Person or Persons lawfully claiming by, through or under, Landlord, subject, however, to the terms of this Lease.

Section 13.3 Security Deposit

(a) It shall be a condition precedent to the effectiveness of this Lease that Tenant shall deliver to Landlord, together with Tenant's execution and delivery of this Lease, the Security Deposit in the form of an irrevocable standby letter of credit (the "Letter of Credit") pursuant to the provisions of paragraphs (b) and (c) below. The Security Deposit shall be held as security for the performance of Tenant's obligations. The Security Deposit is not an advance payment of Rent or a measure of damages. Landlord may use all or a portion of the Security Deposit to satisfy past-due Rent or to cure any Event of Default by Tenant. If Landlord uses any portion of the Security Deposit, Tenant shall, within five (5) days after demand, restore the Security Deposit to its original amount. Landlord may assign the Security Deposit to a successor or transferee that purchases the Property and, following the assignment, Landlord shall have no further liability for the return of the Security Deposit. In the event Landlord or its successor or transferee pays, on behalf of Tenant, any transfer fee required by the issuer of a Letter of Credit in connection with a transfer of the Letter of Credit, Tenant shall reimburse such transfer fee to Landlord, as additional Rent, within fifteen (15) days of Landlord's invoice therefor.

(b) The Letter of Credit (and any renewals or replacements thereof) shall:

(i) be in the amount of $137,714.00;

(ii) be issued on a form reasonably acceptable to Landlord;

(iii) name Landlord as its beneficiary;

(iv) be transferable by Landlord to Landlord's transferee, without Tenant's approval, should Landlord transfer or convey its interest in the Property, with any transfer fees being for the account of Tenant;

(v) be drawn on an FDIC insured financial institution reasonably satisfactory to the Landlord and having a minimum corporate credit rating from Standard and Poor's Professional Rating Service of "BBB" or a comparable minimum credit rating from Moody's Professional Rating Service (Landlord hereby acknowledging that Silicon Valley Bank is acceptable to Landlord on the date hereof);

(vi) be for a term of not less than one (1) year;

(vii) allow draws on the Letter of Credit at the bank counter of the issuing bank, and/or by overnight courier; and

(viii) expressly provide that the amount thereof may not be reduced by amendment unless and until Landlord shall have provided its written consent to such amendment ((i) - (viii) being referred to herein as the "LOC Criteria").

(c) Tenant agrees that it shall from time to time, as necessary, whether as a result of a draw on the Letter of Credit by Landlord pursuant to the terms hereof or as a result of the expiration of the Letter of Credit then in effect, renew or replace the original and any subsequent Letter of Credit so that a Letter of Credit, in the amount required hereunder, is continuously in effect until a date which is at least thirty (30) days after the Termination Date. If (x) Tenant fails to furnish such renewal or replacement at least thirty (30) days prior to the stated expiration date of the Letter of Credit then held by Landlord, (y) the corporate credit rating of the issuing institution drops below the minimum set forth above and/or (z) if Landlord determines, in its reasonable discretion, that it is reasonably likely that the Letter of Credit shall expire prior to the date Tenant shall surrender possession of the Premises to Landlord in accordance with this Lease, Landlord may draw upon such Letter of Credit and hold the proceeds thereof (and such proceeds need not be segregated) as a cash Security Deposit pursuant to the terms of this Section 13.3. To the extent the Security Deposit is held as cash, the Security Deposit may be commingled with Landlord's general accounts and shall be held by Landlord without liability for interest (unless required by applicable law). Any renewal, replacement or amendment of the original or any subsequent Letter of Credit shall meet the LOC Criteria. If Landlord draws on the Letter of Credit then, within five (5) days following written demand of Landlord, Tenant shall restore the amount available under the Letter of Credit to its original amount by providing Landlord with an amendment to the Letter of Credit evidencing that the amount available under the Letter of Credit has been restored to its original amount. Should Landlord elect to draw upon the Letter of Credit, Tenant expressly waives any rights it might otherwise have to prevent Landlord from drawing on the Letter of Credit and agrees that an action for damages and not injunctive or other equitable relief shall be Tenant's sole remedy in the event Tenant disputes Landlord's claims to any such amounts.

(d) Upon the expiration or earlier termination of this Lease, Landlord shall return any unapplied portion of the Security Deposit to Tenant or return the Letter of Credit within thirty (30) days after the later to occur of: (x) the date Tenant surrenders possession of the Premises to Landlord in accordance with this Lease; or (y) the date of expiration or earlier termination of this Lease.

Landlord shall have the right to pledge or assign its interest in the Security Deposit (including the Letter of Credit and proceeds thereof) to any lender holding a security interest in the Premises. No mortgagee or purchaser of any or all of the Building at any foreclosure proceeding brought under the provisions of any mortgage shall (regardless of whether the Lease is at the time in question subordinated to the lien of any mortgage) be liable to Tenant or any other person for any or all of such sums or the return of any Letter of Credit (or any other or additional Security Deposit or other payments made by Tenant under the provisions of this Lease), unless Landlord has actually delivered the Security Deposit (including the Letter of Credit and proceeds thereof), to such mortgagee or purchaser. If requested by any such mortgagee or purchaser, Tenant shall obtain an amendment to the Letter of Credit that names such mortgagee or purchaser as the beneficiary thereof in lieu of Landlord.

Section 13.4 Notices. Any notice, demand, request or statement required or intended to be given or delivered under the terms of this Lease shall be in writing, shall be addressed to the party to be notified at the address or addresses set forth in the Summary of Basic Terms or at such other address in the continental United States as each party may designate for itself from time to time by notice hereunder, and shall be deemed to have been given, delivered or served upon the earliest of (a) three days following deposit in the U.S. Mail, with proper postage prepaid, certified or registered, return receipt requested, (b) the next business day after delivery to a regularly scheduled overnight delivery carrier with delivery fees either prepaid or an arrangement, satisfactory with such carrier, made for the payment of such fees, or (c) receipt of notice given by personal delivery.

Section 13.5 Waiver of Subrogation. Landlord and Tenant hereby release each other, to the extent of their respective insurance coverages, from any and all liability for any loss or damage caused by fire, any of the extended coverage casualties, or other casualties insured against, even if such fire or other casualty shall be brought about by the fault or negligence of the party benefited by the release or its agents, provided, however, this release shall be in force and effect only with respect to loss or damage occurring during such time as the policies of fire, extended coverage and other insurance, maintained by the releasing party shall contain a clause, or be subject to a statutory provision, to the effect that such release shall not affect said policies or the right of the releasing party to recover thereunder. Tenant agrees that its fire, extended coverage, and other property insurance policies will include such a clause.

Section 13.6 Entire Agreement; Execution; Time of the Essence and Headings and Table of Contents. This Lease together with all Exhibits referred to herein and the Summary of Basic Terms, sets forth the entire agreement between the parties hereto and cannot be modified or amended, except in a writing duly executed by the respective parties. This Lease, together with all Exhibits referred to herein and the Summary of Basic Terms, supersedes all previous written and oral negotiations, understandings and agreements regarding the subject matter of this Lease. Neither Landlord nor any Person acting on behalf of Landlord has made any representations to Tenant on which Tenant has relied in entering into this Lease except any representations expressly stated in this Lease. This Lease is executed as a sealed instrument and in multiple counterparts, all copies of which are identical, and any one of which is to be deemed to be complete in itself and may be introduced in evidence or used for any purpose without the production of any other copy. Time is of the essence of the obligations of the parties to be performed within a specific time frame in this Lease. The headings throughout this Lease and the Table of Contents are for convenience of reference only, and shall in no way be held or deemed to define, limit, explain, describe, modify or add to the interpretation, construction or meaning of any provision of this Lease.

Section 13.7 Partial Invalidity. If any term or condition of this Lease or its application to any Person or circumstance shall to any extent be in violation of or unenforceable under any law, rule, regulation or order (including any court order) now existing or hereafter enacted or entered by any court or other governmental entity having competent jurisdiction (including after all appeals therefrom), the remainder of this Lease, or the application of such term or condition to Persons or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby and shall be enforceable to the fullest extent not prohibited by law.

Section 13.8 No Waiver. No assent, express or implied, by a party to any breach of any agreement or condition herein contained on the part of the other party to be performed or observed, and no waiver, express or implied, of any such agreement or condition shall be deemed to be a waiver of or an assent to any succeeding breach of the same or any other agreement or condition; the acceptance by Landlord of Base Rent or Additional Rent due hereunder (whether such payment is made by Tenant or another Person), or silence by Landlord or Tenant as to any breach by Tenant or Landlord, respectively, shall not be construed as waiving any of Landlord's or Tenant's rights hereunder unless such waiver shall be in writing. No payment by Tenant or acceptance by Landlord of a lesser amount than shall be due Landlord from Tenant shall be deemed to be anything but payment on account, and the acceptance by Landlord of a check for a lesser amount with an endorsement or statement thereon, or upon a letter accompanying said check, that said lesser amount is payment in full shall not be deemed an accord and satisfaction, and Landlord may accept said check without prejudice to recover the balance due or pursue any other remedy.

Section 13.9 Holdover. If Tenant remains in the Premises beyond the expiration of this Lease at the end of the Lease Term, or sooner following an early termination as provided for herein, such holding over shall not create any tenancy, but Tenant shall be a daily tenant at sufferance only subject to all of

Tenant's obligations set forth herein, but at a daily rate equal to 150% of the Base Rent, then in effect, and Additional Rent and other charges provided for under this Lease. The acceptance of a purported rent check following termination shall not constitute the creation of a tenancy at will, it being agreed that Tenant's status shall remain that of a daily Tenant at sufferance, at the aforesaid daily rate. Tenant shall also pay to Landlord all damages, if any, sustained by reason of any such holding over; provided, however, that in no event shall Tenant be liable to Landlord for any consequential, punitive, special or exemplary damages arising in connection with such holdover except in the event such holdover extends for more than sixty (60) days following Landlord's delivery to Tenant of a written notice to vacate. Otherwise, such holding over shall be on the terms and conditions set forth in this Lease as far as applicable.

Section 13.10 When Lease Becomes Binding. The submission of this document for examination and negotiation does not constitute an offer to lease or a reservation or an option for the Premises, and this document shall become effective and binding only upon the execution and delivery hereof by both Landlord and Tenant. All negotiations, considerations, representations and understandings between Landlord and Tenant are incorporated herein and may be modified or altered only by agreement in writing between Landlord and Tenant, and no act or omission of any employee or agent of Landlord shall alter, change or modify any of the provisions hereof.

Section 13.11 No Recordation. Tenant shall not record this Lease with any registry of deeds or land court, and any recordation of this Lease will be void and constitute an Event of Default under this Lease.

Section 13.12 As Is. Tenant represents to Landlord that Tenant has leased the Premises after a full and complete examination of the same, and by its execution and delivery of this Lease, Tenant hereby acknowledges that neither Landlord, nor Landlord's agents, has made any representation or promises with respect to the Premises, the Building, or the land upon which it stands, and no rights, easements or licenses are acquired by Tenant, by implication or otherwise, except as may be set forth expressly in this Lease. The execution and delivery of this Lease by Tenant shall be conclusive evidence, as against Tenant, that Tenant accepts the Premises "AS IS", with all faults.

Section 13.13 Financial Statements; Certain Representations and Warranties of Tenant. From time to time as requested by Landlord, but not more than once in any year, and only if Tenant is not then a publicly traded company, Tenant shall provide to Landlord, any actual or potential mortgagee and any actual or potential ground lessor or any representative of any of the foregoing, copies of Tenant's annual financial statements (audited or reviewed, if available) and quarterly financial statements, all certified as true and correct by Tenant, and, if Tenant is not then a publicly traded company, such other information regarding Tenant's financial condition as Landlord may reasonably request; provided, however, that Landlord shall only request such financial statements if requested by a prospective lender or purchaser or if Tenant requests Landlord's consent to an assignment or sublease. Tenant represents and warrants to Landlord, its successors and assigns that: (a) Tenant is a corporation duly organized

and validly existing under the laws of the State of Delaware, and is authorized to transact business in the Commonwealth of Massachusetts; (b) the execution, delivery and performance of this Lease by Tenant has been duly authorized by Tenant; and (c) this Lease is valid and binding upon Tenant and is enforceable against Tenant in accordance with the terms hereof.

Section 13.14 (a) Real Estate Confidentiality. Tenant acknowledges that the terms under which Landlord has leased the Premises to Tenant, including, without limitation, the rental rate(s), term and other financial and business terms, constitute confidential information of Landlord ("Landlord Confidential Information"). Tenant covenants and agrees to keep the Landlord Confidential Information completely confidential; provided that (a) such Landlord Confidential Information may be disclosed by Tenant to those of its and its Tenant Affiliate's officers, employees, attorneys, accountants, lenders, real estate brokers, contractors, consultants and financial advisors (collectively, "representatives") who need to know such information in connection with Tenant's use and occupancy of the Premises and for financial reporting and credit related activities (it being understood that Tenant shall inform its representatives of the confidential nature of such Landlord Confidential Information and that such representatives shall be directed by Tenant, and shall each expressly agree, to treat such Landlord Confidential Information confidentially in accordance with the terms of this Section), (b) such Landlord Confidential Information may be disclosed by Tenant to the extent otherwise in the public domain or to the extent required to be disclosed in connection with litigation involving this Lease or the Premises, and (c) unless required by applicable law, any other disclosure of such information may only be made if Landlord consents in writing prior to any such disclosure. In furtherance of and not in limitation of the foregoing, Tenant understands and agrees that during the period of any negotiation of the terms of this Lease, the disclosure of Tenant's possible interest in leasing the Premises and the terms thereof could have a material adverse effect on Landlord's business.

Landlord acknowledges that the financial statements of Tenant and other financial and business information related to Tenant and its business constitute confidential information of Tenant ("Tenant Confidential Information"). Landlord covenants and agrees to keep the Tenant Confidential Information completely confidential; provided that (a) such Tenant Confidential Information may be disclosed by Landlord to those of its officers, employees, attorneys, accountants, lenders and financial advisors (collectively, "representatives") who need to know such information (it being understood that Landlord shall inform its representatives of the confidential nature of such Tenant Confidential Information and that such representatives shall be directed by Landlord, and shall each expressly agree, to treat such Tenant Confidential Information confidentially in accordance with the terms of this Section), (b) such Tenant Confidential Information may be disclosed by Landlord to Landlord's lenders and prospective lenders and to prospective purchasers of Landlord's Property (it being understood that Landlord shall inform its lenders and prospective lenders and purchasers of the confidential nature of such Tenant Confidential Information and that such lenders and prospective lenders and purchasers shall be directed by Landlord, and shall each expressly agree, to treat such Tenant Confidential Information confidentially in accordance with the terms of this Section), and (c) unless required by applicable law, any other disclosure of such information may only be made if Tenant consents in writing prior to any such disclosure.

(b) Non Real Estate Confidentiality.

(i) Each of Tenant and Landlord agrees and acknowledges that it is not granted any rights to use or access any Confidential Information of the other party ("Counterparty Confidential Information") by virtue of this Lease.

(ii) Each party, as the receiving party ("Receiving Party") shall keep all Counterparty Confidential Information confidential and, except with the express prior written consent of the other party ("Counterparty") shall not:

(A) disclose or make available or publish the Counterparty Confidential Information in whole or in part to any third party, except as expressly permitted by this Lease;

(B) copy, reduce to writing or otherwise record the Counterparty Confidential Information;

(C) use, reproduce, transform or store the Counterparty Confidential Information in any retrieval or storage system whatsoever.

(iii) The Receiving Party may disclose Counterparty Confidential Information only to the extent required by law, any governmental order or other legal requirement provided that, to the extent it is legally permitted to do so, it gives the Counterparty as much notice of such disclosure as possible and, where notice of disclosure is not prohibited and is given in accordance with this Section 13.14(b) Receiving Party takes into account the reasonable requests of the Counterparty in relation to the content of such disclosure. The Receiving Party shall cooperate with the Counterparty to obtain confidential treatment, to the extent possible, with respect to the Counterparty Confidential Information so disclosed.

(iv) The Receiving Party's obligations in relation to Counterparty Confidential Information shall, notwithstanding any earlier termination of the Lease continue in perpetuity.

(v) The Receiving Party shall be liable for any breach by any of its employees, representatives, officers, directors and persons within its control of the restrictions contained in this clause (b) and agrees, at its sole expense, to take reasonable measures to prevent the prohibited or unauthorized disclosure or use of the Counterparty Confidential Information by those persons.

(vi) Without limitation, the Receiving Party shall use at least the same effort and degree of care that it uses to protect its own confidential information of a similar nature from unauthorized use or disclosure, but shall not use less than a commercially reasonable degree of care.

"Counterparty Confidential Information" as herein used shall mean all confidential information or material (however recorded or preserved) disclosed or made available by the Counterparty to the Receiving Party, directly or indirectly, or which in any way as a result of this Lease or the Receiving Party's dealings with the Counterparty or the Property, including the Tenant's access to the Common Areas, is received by, comes into the possession of, or to the attention of the Receiving Party and any employees, directors, officers, representatives,

contractors or advisers of the Receiving Party or persons under the Receiving Party's control including but not limited to:

(AA) any information, (including but not limited to in the form of documents, notes, analyses, studies, samples, drawings, diagrams, designs, flowcharts, databases and models) that would be regarded as confidential by a reasonable business person relating to:

(i) the business, affairs, customers, clients, suppliers, plans, intentions, market opportunities, compounds, candidate drugs or products of the Counterparty and/or persons within its control; and

(ii) the operations, processes, product information, know-how, designs, trade secrets, or software of the Counterparty and/or persons within its control; and

(BB) any information or analysis derived from the Counterparty Confidential Information;

but not including any information that:

(CC) is or becomes generally available to the public (other than as a result of its disclosure by the Receiving Party or its representatives in breach of this Lease), (except that any compilation of otherwise public information in a form not publicly known shall nevertheless be treated as Counterparty Confidential Information);

(DD) was lawfully in the possession of the Receiving Party on a non-confidential basis before the information was disclosed to it by the Counterparty as evidenced by Receiving Party's written records; or

(EE) is developed by the Receiving Party independently of the information disclosed by the Counterparty.

Receiving Party acknowledges that Counterparty may require individual Receiving Party employees to sign an individual confidentiality and non-disclosure agreement to manage intellectual property risks of working in a shared space with Counterparty employees, and such confidentiality and non-disclosure agreement may, without limitation, prohibit Receiving Party employees from disclosing Counterparty Confidential Information to employees of Counterparty.

Section 13.15 Summary of Basic Terms. The Summary of Basic Terms which is affixed to this Lease sets forth certain basic terms and information which is thereafter referred to in the main text of this Lease. Every reference to the Summary of Basic Terms, or to a particular item thereon, shall have the effect of incorporating the Summary, or the particular item thereof, into the main text of this Lease.

Section 13.16 Jurisdiction and Venue. As the Premises are located in the Commonwealth of Massachusetts, Tenant agrees that its address for service of process is the address of the Premises or alternatively, with the

Secretary of State of the Commonwealth of Massachusetts. In any cause of action arising out of or in connection with the Premises and the terms of this Lease, Tenant hereby submits itself to the jurisdiction of any state or federal court in the Commonwealth of Massachusetts and agrees that any such cause of action shall be governed by the laws of the Commonwealth of Massachusetts and further agrees that any such cause of action prosecuted by Tenant shall only be brought in state or federal courts in the Commonwealth of Massachusetts. This Lease and the rights and obligations of the parties hereto shall be construed and enforced in accordance with the laws of the Commonwealth of Massachusetts.

Tenant and Landlord, each by its duly authorized officer, has signed this Lease as of the date first set forth above.

TENANT:

MORPHIC ROCK THERAPEUTIC, INC., a Delaware corporation

By: /s/ Robert E. Farrell, Jr.
Name: Robert E. Farrell, Jr.
Title: VP Finance & Operations
Duly Authorized

LANDLORD:

ASTRAZENECA PHARMACEUTICALS LIMITED PARTNERSHIP, a Delaware limited partnership

By: /s/ Matthew D. Arnold
Name: Matthew D. Arnold
Title: VP IMED Operations
Duly Authorized

EXHIBIT A

PROPERTY DESCRIPTION

The property is a state-of-the-art multi-tenant office, research and development, and laboratory facility located at 35 Gatehouse Drive in Waltham, Massachusetts. It provides spectacular views of the Cambridge Reservoir and is adjacent to over 22 acres of beautiful wooded protected park land in Weston, MA. It is situated directly off of Interstate 95 / Route 128 at Exit 17, neighboring Reservoir Woods, Waltham Woods, and Bay Colony Corporate Center. This location offers excellent proximity to Greater Boston's most desirable residential communities and to the R&D epicenter of Cambridge, world-renowned for the region's best intellectual talent.

The location is a series of interconnecting modern buildings, clad in glass and curtain wall skin that creates a world class destination. It offers tenants leading technology infrastructure. The tenant specific areas for lease are extremely flexible to accommodate a variety of specific research and development tailored to a tenant's needs. Large ribbon windows and incredible natural light also enhance the "universal lab" flexibility and quality of environment. Common areas are spacious, modern, and can provide informal collaboration areas.

EXHIBIT B

SITE PLAN

EXHIBIT C

BUILDING FLOOR PLANS

(showing Premises)

[see attached]

35 GATEHOUSE DRIVE

WALTHAM, MASSACHUSETTS

BUILDING AMENITIES
BUILDING SERVICES
OFFICE
LAB

BUILDING A LEVEL 02 - 11,166 RSF

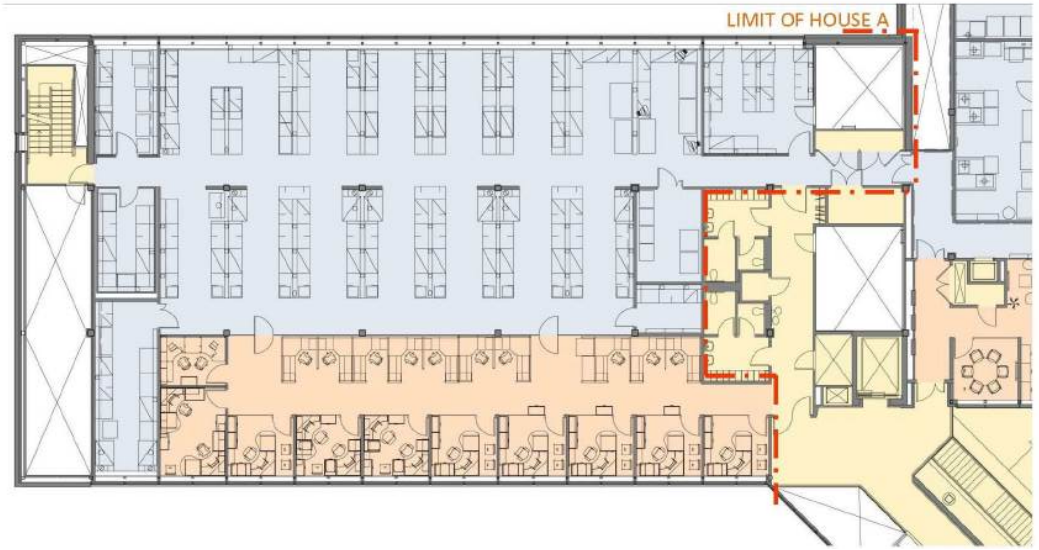

EXHIBIT D

RULES AND REGULATIONS

ASTRAZENECA PHARMACEUTICALS LIMITED PARTNERSHIP ("Landlord"), hereby promulgates the rules and regulations (the "Rules and Regulations") set forth below with respect to the use of the office building (the "Building") and related amenities located at and known as 35 Gatehouse Drive, Waltham, Massachusetts (the "Property") by tenants (collectively, the "Tenants," and individually, a "Tenant") of the Building. Office space within the Building leased by a Tenant is called "Premises." The Rules and Regulations are as follows:

1. Sidewalks, doorways, vestibules, stairways, corridors, halls and other similar areas within the common areas of the Property (the "Common Areas") shall not be obstructed by any Tenant or used for any purpose other than ingress and egress to and from the portion of the Property leased by the applicable Tenant and for going from one part of the Property to another part of the Property.

2. No sign, advertisement, notice or other lettering shall be exhibited, inscribed, painted or affixed by a Tenant on or to any window, door, corridor or other part of the Building which is visible from outside of the Premises without the prior written consent of Landlord.

3. Landlord will provide and maintain a directory board in a Common Area identifying Tenants. Without the prior written consent of Lender, no Tenant shall be entitled to maintain any other directory or identifying sign in any Common Area.

4. Movement of furniture, office equipment or any bulky material which requires movement through the Common Areas of the Building shall be restricted to such hours as Landlord may designate, and such movement shall be subject to such restrictions as Landlord may reasonably impose.

5. Landlord shall have the authority to limit the weight of, and to prescribe and restrict the positioning and manner of installation of, safes, file cabinets and other heavy equipment.

6. No Tenant shall use, or permit any person making or receiving any delivery to its Premises to use, any hand trucks except those equipped with rubber tires and side guards.

7. All locks for doors in each Tenant's Premises shall be building standard and no Tenant shall place any additional lock or locks on any door in its Premises without Landlord's prior written consent. All requests for duplicate keys shall be made through Landlord and charged to the Tenant. Upon termination of a Tenant's tenancy, the Tenant shall deliver to Landlord all keys to the Tenant's Premises, to interior doors within the Tenant's Premises, to doors within the Common Areas and to exterior Building doors which have been furnished to or obtained by the Tenant.

8. Corridor doors, when not in use, shall be kept closed.

9. Each Tenant shall lock all doors of its Premises leading to Common Areas at the close of its working day.

10. No curtains, blinds, draperies or other window treatments shall be attached to or hung in any window of the Premises of a Tenant on an exterior wall of the Building or on an interior wall of the Building dividing the Premises from Common Areas without the prior written consent of Landlord, which consent shall not be unreasonably withheld.

11. Plumbing fixtures and appliances shall be used only for the purposes for which they were designed and constructed, and no sweepings rubbish, rags or other material shall be thrown or placed therein. The cost of repairing any damage resulting from misuse of the plumbing fixtures or appliances by a Tenant or its employees, agents or invitees shall be borne by the responsible Tenant.

12. No Tenant shall use or permit the use of its Premises, or any part thereof, for lodging, for manufacturing, for any immoral or illegal purpose, or for any other purpose which is not permitted by the terms of its lease.

13. No vending machines shall be allowed in any Premises without the prior written consent of Landlord, except for vending machines for the sole use of Tenant, its employees and invitees.

14. Each Tenant shall, at its expense, provide artificial light and electric current for the employees of Landlord and/or Landlord's contractors while performing janitorial or other cleaning, maintenance or repair services in the Tenant's Premises.

15. No Tenant will make or permit any of its employees, agents or invitees to make any improper noises in the Building or to otherwise interfere in any way with other Tenants or persons having business with them.

16. No Tenant shall cause any unnecessary janitorial labor or services by reason of the Tenant's willful misconduct or carelessness or indifference in the preservation of good order and cleanliness.

17. Without the prior written consent of Landlord, no Tenant shall use the name of the Building or any picture of the Building in any materials promoting or advertising the business of the Tenant, except that each Tenant may use the address of the Building as the address of its business.

18. Each Tenant shall cooperate with Landlord to assure the effective operation of the heating and air conditioning systems serving the Tenant's Premises and the Building.

19. Neither Landlord nor the Property manager will be responsible for lost or stolen money, jewelry or other personal property from any areas of the Property, regardless of whether the loss or theft occurs when the area in question is locked.

20. Landlord may, in its discretion, institute security measures in the operation of the Property, and Tenants will comply with all such security measures. Such security measures may

include, but are not limited to, requiring persons entering the Building or the Property to identify themselves to a watchman or other person designated by Landlord and to sign in and sign out of the Property, denying access to persons who are not properly identified or appear suspicious, requiring each employee, guest or visitor to wear and display a security badge at all times, and conducting fire or other emergency drills. The exercise of such security measures by Landlord and any resulting interruption of a Tenant's business shall not constitute an eviction or disturbance of a Tenant's use and possession of its Premises, render Landlord liable to the Tenant for damages, or relieve a Tenant from its obligations under its lease.

21. No bicycles or vehicles shall be brought into or kept in the Building. All bicycles and vehicles brought onto the Property shall be driven and parked only in designated, paved areas.

22. Parking on the Property shall be subject to the restrictions set forth in this paragraph and, with respect to any particular Tenant, to any additional restrictions on parking set forth in such Tenant's lease. Each Tenant and such Tenant's employees, agents and invitees shall have the right, in common with others and in connection with the conduct of Tenant's business at the Property, to park passenger automobiles on portions of the Property which have been striped for parking; provided, however that (a) no Tenant or its employees or agents may park in any space marked "visitor," and (b) no Tenant or its employees, agents or invitees may park in any space marked "reserved," unless reserved for such Tenant, and (c) persons parking their vehicles will do so exclusively within the marked parking space lines. No Tenant or its employees, agents or invitees shall have a right to park vehicles on the Property overnight or for purposes other than in connection with the Tenant's business at the Property. Landlord shall have no responsibility to any Tenant or any Tenant's employees, agents or invitees for any theft, loss of or damage to any vehicle or its contents on the Property. Each Tenant's parking rights, except as otherwise expressly provided in its lease, are in common with other Tenants and on a first come, first served basis, and, except as otherwise expressly provided in its lease or other written agreements with Landlord, no Tenant has the right to any designated parking spaces or to any particular number of parking spaces.

23. All vehicles brought onto the Property by Tenant, its employees, agents, customers and invitees shall be in good condition and appearance and shall be drivable. No such vehicles shall be leaking oil or other fluids.

24. Each Tenant will deposit its garbage, trash and refuse only in approved trash containers within the Tenant's Premises or in designated trash receptacles placed by Landlord within the Common Areas. No Tenant shall deposit any hazardous, flammable or explosive substances in any trash receptacle on the Property.

25. Landlord reserves the right to rescind, alter or waive any of the Rules and Regulations, and to adopt such additional rules and regulations as part of the Rules and Regulations, from time to time as Landlord deems it appropriate for the safety, protection, care and cleanliness of the Property, the operation thereof, the preservation of good order therein or the protection and comfort of the Tenants and their employees, agents and invitees. An alteration or waiver of any of the Rules and Regulations in favor of one Tenant shall not, other than with the consent of Landlord, operate as an alteration or waiver in favor of any other

Tenant. Landlord shall not be responsible to any Tenant for the non-observance or violation by any other Tenant of any of the Rules and Regulations, nor for the enforcement of any of the Rules and Regulations against any other Tenant. No Tenant shall have the right to enforce any of the Rules and Regulations against any other Tenant.

EXHIBIT E

LANDLORD'S WORK

NOT APPLICABLE

Schedule 3E-1

FIRST AMENDMENT OF LEASE

THIS FIRST AMENDMENT OF LEASE (the "**Amendment**") is made and entered into as of November 8, 2016 (the "**Amendment Effective Date**") by and between **ASTRAZENECA PHARMACEUTICALS LP** ("**Landlord**") and **MORPHIC THERAPEUTIC, INC.** (f/k/a Morphic Rock Therapeutic, Inc., "**Tenant**").

RECITALS

A. Landlord and Tenant are parties to that certain Lease dated as of August 5, 2015 (the "**Existing Lease**") whereby Tenant leases certain space in the buildings and facilities commonly known as 35 Gatehouse Drive, Waltham, Massachusetts ("**Landlord's Property**"), which leased space currently consists of approximately 11,166 square feet of rentable space located on Level 2 of Building A (the "**Original Premises**"), all as more particularly set forth in the Existing Lease.

B. Tenant desires to expand the Original Premises to include 1,610 leasable square feet of un-demised space in Building B, Level 2 (the "**B2 Premises**", as more particularly shown in the highlighted areas set forth in Exhibit A-1 attached hereto and incorporated herein) and a 114 leasable square feet in Building B, Level 3 (the "**B3 Premises**", as more particularly shown in the highlighted area set forth in Exhibit A-2 attached hereto and incorporated herein, and together with the B2 Premises, the "**Expansion Premises**").

C. The Existing Lease, as amended by this First Amendment of Lease, shall be referred to herein as the "**Lease**"; and capitalized terms not otherwise defined herein shall have their respective definitions set forth in the Existing Lease.

NOW, THEREFORE, in consideration of the above recitals which by this reference are incorporated herein, the mutual covenants and conditions contained herein and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant agree as follows:

1. **Expansion Premises; Landlord's Equipment; Relocation.**

a. Effective as of the Amendment Effective Date (the "**Expansion Commencement Date**"): (i) the Existing Premises and the Expansion Premises shall together constitute the "Premises" for all purposes under the Lease and (ii) the "Leasable Square Footage of the Premises" set forth in Section 3C of the Summary of Basic Terms in Existing Lease shall be deemed to be **12,890** square feet. The term of the Expansion Premises shall be coterminous with the Original Premises (the "**Expiration Date**"). The parties acknowledge and agree that the Right of Extension shall be applicable to the Expansion Premises (including any Relocation Space, as defined below, if applicable) upon the same terms as applicable to the Original Premises.

b. The Expansion Premises shall be subject to all of the terms and conditions of the Existing Lease currently in effect, except as expressly modified in this Amendment. The Expansion Premises is accepted by Tenant in its "as is" condition and configuration without any representations or warranties by Landlord, express or implied. The B2 Premises may be used for general business offices, scientific research and development laboratory and uses customarily accessory thereto and for no other purposes, and the B3 Premises may be used for conference room purposes, general business

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office and no other purposes. Tenant shall make no alterations to the Expansion Premises except in compliance with the terms of the Lease.

c. Effective as of the Expansion Commencement Date, the term "Landlord's Equipment" shall include the equipment owned by Landlord and located in the Expansion Premises on the Expansion Commencement Date. A complete itemization of such portion of Landlord's Equipment, prepared by Landlord and approved by Tenant, will be agreed upon and listed as an exhibit to this Amendment within thirty (30) days after the Expansion Commencement Date. Additionally, Tenant shall have the right to use the Landlord's work stations and furniture (e.g. desks, chairs and bookcases) located in the Expansion Premises on the Expansion Commencement Date, without warranty or representation as to their usage, fitness or condition and pursuant to the terms of the Lease.

d. Landlord may, from time to time after the date that is twelve (12) calendar months following the Amendment Effective Date and at Landlord's sole cost and expense, relocate Tenant from the B2 Premises and/or B3 Premises to space of reasonably comparable size and utility within Landlord's Property ("Relocation Space"). From and after the date of the relocation, the Base Rent for the Expansion Space, Tenant's Share and the Water Service Charge shall be adjusted based on the rentable square footage of the Relocation Space, provided that if such Relocation Space is larger than the original B2 and/or B3 Premises, as applicable, Base Rent for such larger space shall not increase unless Tenant has requested such larger space. Landlord shall exercise its right to relocate the B2 Premises and/or B3 Premises by providing Tenant written notice of the location of the applicable Relocation Space at least thirty (30) days prior to the relocation.

2. **Base Rent; Tenant's Share Taxes and Operating Costs.**

a. Effective as of the Expansion Commencement Date, the Base Rent for the Expansion Premises shall be as set forth in the following chart (pro-rated for partial months):

Period	Rent per rsf	Annual Base Rent	Monthly base Rent
Expansion Commencement Date — October 31, 2017	$ 38.00	$ 65,512.00	$ 5,459.33
November 1, 2017 — October 31, 2018	$ 39.00	$ 67,236.00	$ 5,603.00
November 1, 2018 — October 31, 2019	$ 40.00	$ 68,960.00	$ 5,746.67
November 1, 2019 — Expiration Date	$ 41.00	$ 70,684.00	$ 5,890.33

b. Effective as of the Expansion Commencement Date, "Tenant's Share" shall be modified to mean **4.33%** being the amount (expressed as a percentage) equal to (a) the aggregate Leasable Square Footage of the Premises (i.e. the Original Premises and the Expansion Premises) divided by (b) the Leasable Square Footage of the Building (rounded to the nearest one-hundredth of one percent (0.01%)).

c. Effective as of the Expansion Commencement Date, the "Water Service Charge" set forth in Section 6.l(c) of the Original Lease shall be deemed to be **$1,589.77** per month ($1.48/rsf per annum).

3. **Parking.** Effective as of the Expansion Commencement Date, the provisions of the Existing Lease regarding Tenant's parking rights shall be modified as follows:

a. Section 7 of the Summary of Basic Terms in the Original Lease shall be replaced with the following:

7. Tenant's Parking Allocation: Thirty-three (33) unassigned parking spaces (2.5 spaces per 1,000 leasable square feet of the Premises), subject to the provisions of Section 2.3.

b. The definition of "Specified Number" in Article I of the Original Lease shall be replaced with the following:

"Specified Number" means thirty-three (33), subject to the provisions of Section 2.3, based on a parking ratio of 2.5 spaces per 1,000 leasable square feet of the Premises.

4. **Miscellaneous.**

a. This Amendment sets forth the entire agreement between the parties with respect to the matters set forth herein. There have been no additional oral or written representations or agreements. Under no circumstances shall Tenant be entitled to any Rent abatement, improvement allowance, leasehold improvements, or other work to the Premises, or any similar economic incentives that may have been provided Tenant in connection with entering into the Existing Lease, unless specifically set forth in this Amendment.

b. Except as is expressly modified or amended here in, the provisions, conditions and terms of the Existing Lease shall remain unchanged and in full force and effect.

c. In the case of any inconsistency between the provisions of the Existing Lease and this Amendment, the provisions of this Amendment shall govern and control.

d. Landlord has delivered a copy of this Amendment to Tenant for Tenant's review only and the delivery of it does not constitute an offer to Tenant or an option. Landlord and Tenant shall not be bound by this Amendment until Landlord and Tenant have executed and delivered the same to the other party.

e. The capitalized terms used in this Amendment shall have the same definitions as set forth in the Existing Lease to the extent that such capitalized terms are defined therein and not redefined in this Amendment.

f. Tenant and Landlord hereby represent to each other that Landlord and Tenant have dealt with no broker in connection with this Amendment other than Transwestem/RBJ. Tenant and Landlord agree to indemnify and hold each other, its trustees, members, principals, beneficiaries, partners, officers, directors, employees, mortgagee(s) and agents, and the respective principals and members of any such agents harmless from all claims of any other brokers claiming to have represented Tenant and Landlord in connection with this Amendment.

g. Each signatory of this Amendment represents hereby that he or she has the authority to execute and deliver the same on behalf of the party hereto for which such signatory is acting.

[SIGNATURES ARE ON FOLLOWING PAGE]

IN WITNESS WHEREOF, Landlord and Tenant have duly executed this First Amendment of Lease as of the Amendment Effective Date as a document under seal.

LANDLORD:

ASTRAZENECA PHARMACEUTICALS LP, a Delaware limited partnership

By: /s/ Kumar Srinivasan

Name: Kumar Srinivasan

Title: Vice President

TENANT:

MORPHIC THERAPEUTIC, INC., a Delaware corporation

By: /s/ Robert Farrell

Name: Robert E. Farrell Jr.

Title: Vice President Finance & Operations

EXHIBIT A-1

Location of B2 Premises

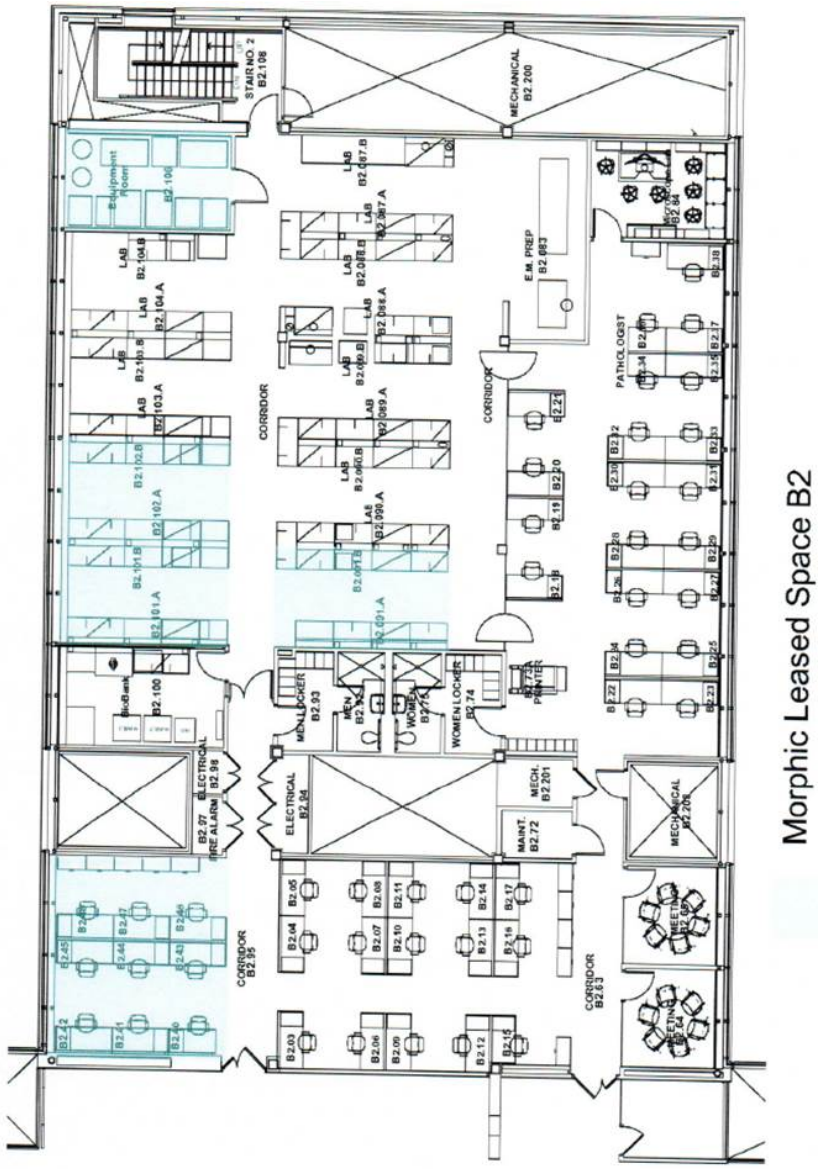
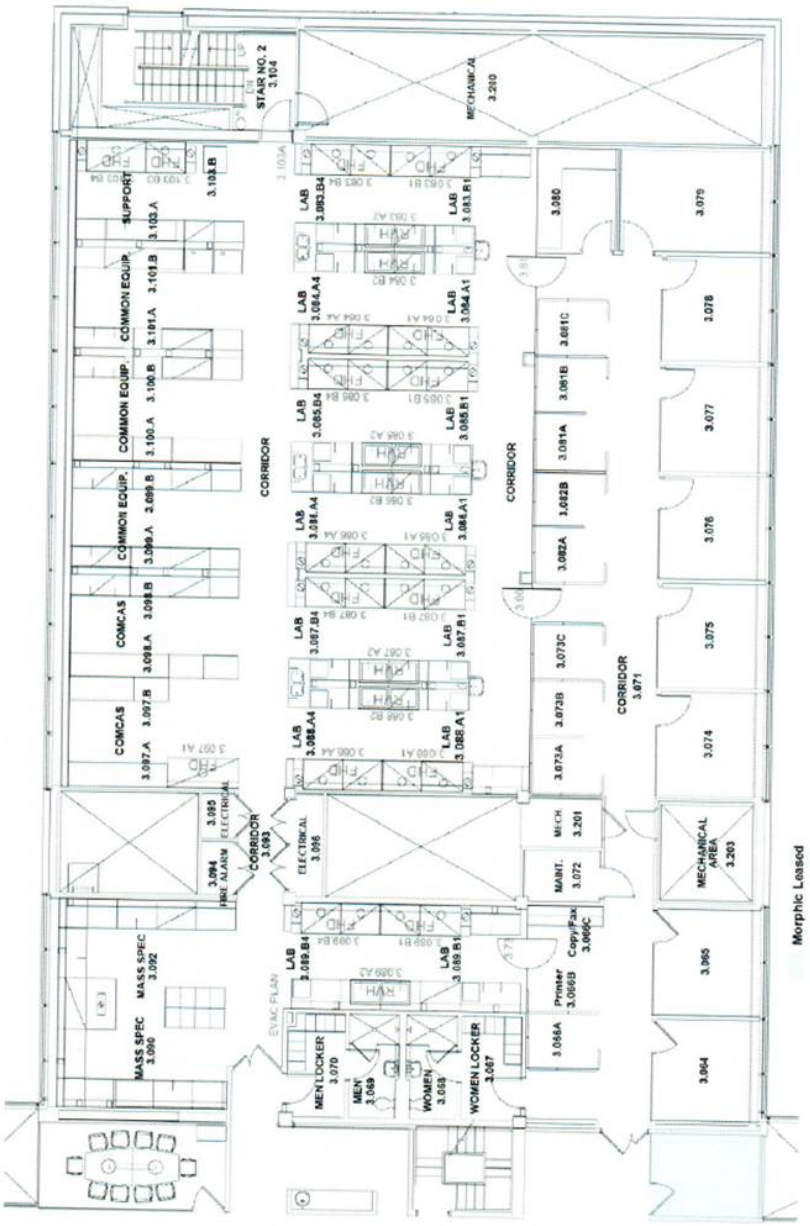


EXHIBIT A-2

Location of B3 Premises



SECOND AMENDMENT OF LEASE

THIS SECOND AMENDMENT OF LEASE (the "**Amendment**") is made and entered into as of June 1, 2017 (the "**Amendment Effective Date**") by and between **ASTRAZENECA PHARMACEUTICALS LP** ("**Landlord**") and **MORPHIC THERAPEUTIC, INC.** (f/k/a Morphic Rock Therapeutic, Inc., "**Tenant**").

RECITALS

A. Landlord and Tenant are parties to that certain Lease dated as of August 5, 2015 (the "**Original Lease**"), as amended by that certain First Amendment of Lease dated as of November 8, 2016 (the "**First Amendment**" and together with the Original Lease, the "**Existing Lease**") whereby Tenant leases certain space in the buildings and facilities commonly known as 35 Gatehouse Drive, Waltham, Massachusetts ("**Landlord's Property**"), which leased space currently consists of approximately 11,166 square feet of rentable space located on Level 2 of Building A (the "**A2 Premises**"), 1,610 square feet of un-demised rentable space located on Level 2 of Building B (the "**B2 Premises**) and 114 square feet of rentable space located on Level 3 of Building B (the "**B3 Premises**", and together with the A2 Premises and the B2 Premises, the "**Existing Premises**"), all as more particularly set forth in the Existing Lease.

B. Tenant desires to (i) expand the Existing Premises to include 12,147 square feet of rentable office space located on Level 2 of Building D (the "**D2 Premises**", as more particularly shown in the highlighted areas labeled "D2 Office Area" set forth in Exhibit A attached hereto and incorporated herein) and 9,092 square feet of rentable laboratory space located on Level 3 of Building C (the "**C3 Premises**", as more particularly shown in the highlighted areas labeled "C3 Lab" set forth in Exhibit A attached hereto and incorporated herein, and together with the D2 Premises, the "**Second Expansion Premises**"), (ii) release the B3 Premises from the Existing Lease on June 30, 2017 and (iii) release the B2 Premises from the Existing Lease on August 31, 2017.

C. The Existing Lease, as amended by this Second Amendment of Lease, shall be referred to herein as the "**Lease**"; and capitalized terms not otherwise defined herein shall have their respective definitions set forth in the Existing Lease.

NOW, THEREFORE, in consideration of the above recitals which by this reference are incorporated herein, the mutual covenants and conditions contained herein and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant agree as follows:

1. **Second Expansion Premises; Release of B3 Premises and B2 Premises; Landlord's Equipment.**

a. Effective as of the later of (i) June 1, 2017 and (ii) the date that Landlord delivers full possession of the Second Expansion Premises to Tenant free of all tenants and occupants and broom clean (except for Landlord's Equipment) (the "**Second Expansion Commencement Date**"): the Existing Premises and the Second Expansion Premises shall together constitute the "Premises" for all

purposes under the Lease (including Section 3A of the Summary of Basic Terms in the Original Lease) and the "Leasable Square Footage of the Premises" set forth in Section 3C of the Summary of Basic Terms in the Original Lease shall be deemed to be **34,129** square feet. Effective as of the Amendment Effective Date, the Lease Term (as defined in Section 3A of the Summary of Basic Terms in the Original Lease) and the Initial Term (as defined in Article I of the Original Lease) with respect to the A2 Premises and the Second Expansion Premises shall be extended to and expire on **May 31, 2022**.

b. The Second Expansion Premises shall be subject to all of the terms and conditions of the Existing Lease currently in effect, except as expressly modified in this Amendment. The Second Expansion Premises is accepted by Tenant in its "as is" condition and configuration without any representations or warranties by Landlord, express or implied. The D2 Premises may be used for general business offices and uses customarily accessory thereto and for no other purposes, and the C3 Premises may be used as a scientific research and development laboratory and uses customarily accessory thereto, and no other purposes. Tenant shall make no alterations to the Second Expansion Premises except in compliance with the terms of the Lease.

c. Effective as of July 1, 2017: the A2 Premises, the B2 Premises and the Second Expansion Premises shall together constitute the "Premises" for all purposes under the Lease (including Section 3A of the Summary of Basic Terms in the Original Lease) and the "Leasable Square Footage of the Premises" set forth in Section 3C of the Summary of Basic Terms in the Original Lease shall be deemed to be **34,015** square feet. Effective as of September 1, 2017: the A2 Premises and the Second Expansion Premises shall together constitute the "Premises" for all purposes under the Lease (including Section 3A of the Summary of Basic Terms in the Original Lease) and the "Leasable Square Footage of the Premises" set forth in Section 3C of the Summary of Basic Terms in the Original Lease shall be deemed to be **32,405** square feet. The parties acknowledge and agree that the Right of Extension shall be applicable to the Premises, as defined in the prior sentence, upon the same terms and conditions set forth in the Existing Lease.

d. Effective as of the Second Expansion Commencement Date, the term "Landlord's Equipment" shall include the equipment owned by Landlord and located in the Existing Premises and Second Expansion Premises on the Second Expansion Commencement Date. A complete itemization of the Landlord's Equipment in the Second Expansion Premises, prepared by Landlord and approved by Tenant, will be agreed upon and listed as an exhibit to this Amendment within thirty (30) days after the Second Expansion Commencement Date. Additionally, Tenant shall have the right to use the Landlord's work stations and furniture (e.g. desks, chairs and bookcases) located in the Second Expansion Premises on the Second Expansion Commencement Date, without warranty or representation as to their usage, fitness or condition and pursuant to the terms of the Lease. Effective as of July 1, 2017 the term "Landlord's Equipment" shall include only the equipment owned by Landlord and located in the A2 Premises, B2 Premises and Second Expansion Premises on such date. Effective as of September 1, 2017 the term "Landlord's Equipment" shall include only the equipment owned by Landlord and located in the A2 Premises and Second Expansion Premises on such date.

e. On or prior to July 1, 2017, Tenant shall surrender the B3 Premises, and Landlord's Equipment therein, to Landlord in the condition required under the Lease, including without limitation Sections 2.6 and 7.4 of the Existing Lease. On or prior to September 1, 2017, Tenant shall surrender the B2 Premises, and Landlord's Equipment therein, to Landlord in the condition required under the Lease, including without limitation Sections 2.6 and 7.4 of the Existing Lease.

f. Section 1.d. of the First Amendment shall be of no further force or effect.

2. **Base Rent; Tenant's Share Taxes and Operating Costs; Security Deposit.**

a. Effective as of the Second Expansion Commencement Date, the Base Rent for the Second Expansion Premises shall be as set forth in the following chart (pro-rated for partial months):

Period	Rent per rsf	Annual Base Rent	Monthly Base Rent
Second Expansion Commencement Date through the ninety-second (92nd) day after the Second Expansion Commencement Date	$0.00	$ 0.00	$ 0.00
Ninety-third (93rd) day after the Second Expansion Commencement Date— May 30, 2018	$41.00 (for C3) and $25.00 (for D2)	$ 676,447.00	$ 56,370.58
June 1, 2018 — May 30, 2019	$42.00 (for C3) and $26.00 (for D2)	$ 697,686.00	$ 58,140.50
June 1, 2019 — May 30, 2020	$43.00 (for C3) and $27.00 (for D2)	$ 718,925.00	$ 59,910.42
June 1, 2020 — May 30, 2021	$44.00 (for C3) and $28.00 (for D2)	$ 740,164.00	$ 61,680.33
June 1, 2021 — May 30, 2022	$45.00 (for C3) and $29.00 (for D2)	$ 761,403.00	$ 63,450.25

b. Effective as of the Second Expansion Commencement Date, the Base Rent for the Expansion Premises (as defined in the First Amendment, i.e. the B3 Premises and B2 Premises) shall be as set forth in the following chart:

Period	Rent per rsf	Annual Base Rent	Monthly Base Rent
Second Expansion Commencement Date — June 30, 2017	$38.00 (based upon 1,724 rsf)	$ 65,512.00	$ 5,459.33
July 1, 2017 — August 31, 2017	$38.00 (based upon 1,610 rsf)	$ 61,180.00	$ 5,098.33

c. Effective as of the Second Expansion Commencement Date, the Base Rent for the A2 Premises for the period from November 1, 2020 — May 30, 2022 shall be as set forth in the following chart:

Period	Rent per rsf	Annual Base Rent	Monthly Base Rent
November 1, 2020 — May 30, 2021	$ 44.00	$ 491,304.00	$ 40,942.00
June 1, 2021 — May 30, 2022	$ 45.00	$ 502,470.00	$ 41,872.50

d. Effective as of the Second Expansion Commencement Date, "Tenant's Share" shall be modified to mean **11.47%**. Effective as of July 1, 2017, "Tenant's Share" shall be modified to mean **11.43%**. Effective as of September 1, 2017, "Tenant's Share" shall be modified to mean **10.89%**. In each case, the "Tenant's Share" is the amount (expressed as a percentage) equal to (a) the aggregate Leasable Square Footage of the Premises divided by (b) the Leasable Square Footage of the Building (rounded to the nearest one-hundredth of one percent (0.01%)).

e. Effective as of the Second Expansion Commencement Date, the "Water Service Charge" set forth in Section 6.1(c) of the Original Lease shall be deemed to be **$4,209.24** per month ($1.48/rsf per annum). Effective as of July 1, 2017, the "Water Service Charge" set forth in Section 6.1(c) of the Original Lease shall be deemed to be **$4,195.18** per month ($1.48/rsf per annum). Effective as of September 1, 2017, the "Water Service Charge" set forth in Section 6.1(c) of the Original Lease shall be deemed to be **$3,996.62** per month ($1.48/rsf per annum).

f. Effective as of the Second Expansion Commencement Date, Section 13 of the Summary of Basic Terms in the Original Lease and Section 13.3 of the Original Lease shall be amended to provide that the Security Deposit amount shall be **$275.188.74**. Tenant shall deliver to Landlord either (i) an amendment to its existing Letter of Credit increasing the same to $275,188.74, or (ii) an additional Letter of Credit complying with the terms and conditions of Section 13.3 of the Original Lease in the amount of $137,474.74.

3. **Parking.**

a. Effective as of the Second Expansion Commencement Date, the provisions of the Existing Lease regarding Tenant's parking rights shall be modified as follows:

(i) Section 7 of the Summary of Basic Terms in the Original Lease shall be replaced with the following:

7. Tenant's Parking Allocation: Eighty-six (86) unassigned parking spaces (2.5 spaces per 1,000 leasable square feet of the Premises), subject to the provisions of Section 2.3.

(ii) The definition of "Specified Number" in Article I of the Original Lease shall be replaced with the following:

"Specified Number" means Eighty-six (86), subject to the provisions of Section 2.3, based on a parking ratio of 2.5 spaces per 1,000 leasable square feet of the Premises.

b. Effective as of September 1, 2017, the provisions of the Existing Lease regarding Tenant's parking rights shall be modified as follows:

(i) Section 7 of the Summary of Basic Terms in the Original Lease shall be replaced with the following:

7. Tenant's Parking Allocation: Eighty-one (81) unassigned parking spaces (2.5 spaces per 1,000 leasable square feet of the Premises), subject to the provisions of Section 2.3.

(ii) The definition of "Specified Number" in Article I of the Original Lease shall be replaced with the following:

"Specified Number" means Eighty-one (81), subject to the provisions of Section 2.3, based on a parking ratio of 2.5 spaces per 1,000 leasable square feet of the Premises.

4. **Contingency.** Landlord and Tenant acknowledge and agree that the effectiveness of this Amendment shall be subject to the conditions precedent that (i) Landlord and the current occupant of the Second Expansion Premises shall terminate the current occupant's existing lease of the Second Expansion Premises in a manner satisfactory to Landlord and (ii) the Landlord shall deliver the Second Expansion Premises to Tenant free of all tenants and occupants. Upon delivery of the Second Expansion Premises to Tenant free of all tenants and occupants, this contingency shall be deemed to have satisfied.

5. **Miscellaneous.**

a. This Amendment sets forth the entire agreement between the parties with respect to the matters set forth herein. There have been no additional oral or written representations or agreements. Under no circumstances shall Tenant be entitled to any Rent abatement, improvement allowance, leasehold improvements, or other work to the Premises, or any similar economic incentives that may have been provided Tenant in connection with entering into the Existing Lease, unless specifically set forth in this Amendment.

b. Except as is expressly modified or amended herein, the provisions, conditions and terms of the Existing Lease shall remain unchanged and in full force and effect.

c. In the case of any inconsistency between the provisions of the Existing Lease and this Amendment, the provisions of this Amendment shall govern and control.

d. Landlord has delivered a copy of this Amendment to Tenant for Tenant's review only and the delivery of it does not constitute an offer to Tenant or an option. Landlord and Tenant shall not be bound by this Amendment until Landlord and Tenant have executed and delivered the same to the other party.

e. The capitalized terms used in this Amendment shall have the same definitions as set forth in the Existing Lease to the extent that such capitalized terms are defined therein and not redefined in this Amendment.

f. Tenant and Landlord hereby represent to each other that Landlord and Tenant have dealt with no broker in connection with this Amendment other than Transwestern/RBJ. Tenant and Landlord agree to indemnify and hold each other, its trustees, members, principals, beneficiaries, partners, officers, directors, employees, mortgagee(s) and agents, and the respective principals and members of any such agents harmless from all claims of any other brokers claiming to have represented Tenant and Landlord in connection with this Amendment.

g. Each signatory of this Amendment represents hereby that he or she has the authority to execute and deliver the same on behalf of the party hereto for which such signatory is acting.

[SIGNATURES ARE ON FOLLOWING PAGE]

IN WITNESS WHEREOF, Landlord and Tenant have duly executed this Second Amendment of Lease as of the Amendment Effective Date as a document under seal.

LANDLORD:

ASTRAZENECA PHARMACEUTICALS LP, a Delaware limited partnership

By: /s/ Kumar Srinivasan

Name: Kumar Srinivasan

Title: Vice President

TENANT:

MORPHIC THERAPEUTIC, INC., a Delaware corporation

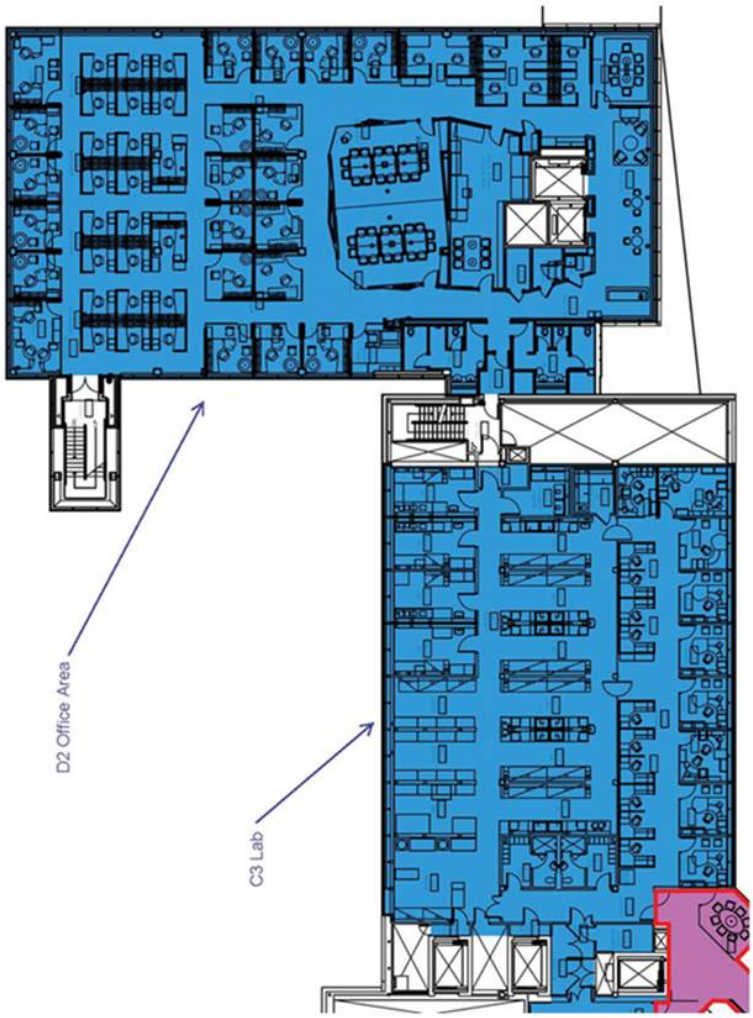
By: /s/ Robert Farrell

Name: Robert Farrell

Title: VP Finance & Operations

EXHIBIT A

Location of the D2 Premises and C3 Premises



THIRD AMENDMENT OF LEASE

THIS THIRD AMENDMENT OF LEASE (the "**Amendment**") is made and entered into as of April 20, 2018 (the "**Amendment Effective Date**") by and between **ASTRAZENECA PHARMACEUTICALS LP** ("**Landlord**") and **MORPHIC THERAPEUTIC, INC.** (f/k/a Morphic Rock Therapeutic, Inc., "**Tenant**").

RECITALS

A. Landlord and Tenant are parties to that certain Lease dated as of August 5, 2015 (the "**Original Lease**"), as amended by that certain First Amendment of Lease dated as of November 8, 2016 (the "**First Amendment**") and as further amended by that certain Second Amendment of Lease dated as of June 1, 2017 (the "**Second Amendment**" and together with the Original Lease and the First Amendment, the "**Existing Lease**") whereby Tenant leases certain space in the buildings and facilities commonly known as 35 Gatehouse Drive, Waltham, Massachusetts ("**Landlord's Property**"), which leased space currently consists of approximately 11,166 square feet of rentable space located on Level 2 of Building A (the "**A2 Premises**"), 12,147 square feet of rentable office space located on Level 2 of Building D (the "**D2 Premises**") and 9,092 square feet of rentable laboratory space located on Level 3 of Building C (the "**C3 Premises**", and together with the A2 Premises and the D2 Premises, the "**Existing Premises**"), all as more particularly set forth in the Existing Lease.

B. Tenant desires to release a portion of the D2 Premises (the "**Released D2 Premises**" as more particularly shown in the highlighted areas labeled "Astrazeneca" and "Floor Common" set forth in Exhibit A attached hereto and incorporated herein) and agreed to contain 2,620 square feet from the Existing Lease on May 1, 2018 and retain the remaining 9,527 square foot portion of the D2 Premises (the "**Remaining D2 Premises**" as more particularly shown in the highlighted areas labeled "Morphic Rock" set forth in Exhibit A).

C. The Existing Lease, as amended by this Third Amendment of Lease, shall be referred to herein as the "**Lease**"; and capitalized terms not otherwise defined herein shall have their respective definitions set forth in the Existing Lease.

NOW, THEREFORE, in consideration of the above recitals which by this reference are incorporated herein, the mutual covenants and conditions contained herein and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant agree as follows:

1. **Release of Released D2 Premises; Landlord's Equipment; D2 Common Area.**

a. Effective as of May 1, 2018, the A2 Premises, the C3 Premises and the Remaining D2 Premises shall together constitute the "Premises" for all purposes under the Lease (including Section 3A of the Summary of Basic Terms in the Original Lease) and the "Leasable Square Footage of the Premises" set forth in Section 3C of the Summary of Basic Terms in the Original Lease shall be deemed to be **29,785** square feet. The parties acknowledge and agree that the Right of Extension shall be applicable to the Premises, as defined in the prior sentence, upon the same terms and conditions set forth in the Existing Lease.

b. Effective as of May 1, 2018 the term "Landlord's Equipment" shall include only the equipment owned by Landlord and located in the A2 Premises, the C3 Premises and the Remaining D2 Premises on such date.

c. On or prior to May 1, 2018, Tenant shall surrender the Released D2 Premises, and Landlord's Equipment therein, to Landlord in the condition required under the Lease, including without limitation Sections 2.6 and 7.4 of the Existing Lease.

d. Effective as of May 1, 2018, Tenant shall have the right, in common with Landlord and others entitled thereto, to use as Common Areas the highlighted areas labeled "Floor Common" set forth in Exhibit A (the "**D2 Common Area**"), which area shall be deemed a portion of the Common Areas.

2. **Base Rent; Tenant's Share Taxes and Operating Costs.**

a. Effective as of May 1, 2018, the Base Rent for the C3 Premises and D2 Remaining Premises shall be as set forth in the following chart (pro-rated for partial months):

Period	Rent per rsf	Annual Base Rent	Monthly Base Rent
May 1, 2018 — May 30, 2018	$41.00 (for C3) and $25.00 (for D2)	$ 610,947.00	$ 50,912.25
June 1, 2018 — May 30, 2019	$42.00 (for C3) and $26.00 (for D2)	$ 629,566.00	$ 52,463.83
June 1, 2019 — May 30, 2020	$43.00 (for C3) and $27.00 (for D2)	$ 648,185.00	$ 54,015.42
June 1, 2020 — May 30, 2021	$44.00 (for C3) and $28.00 (for D2)	$ 666,804.00	$ 55,567.00
June 1, 2021 — May 30, 2022	$45.00 (for C3) and $29.00 (for D2)	$ 685,423.00	$ 57,118.58

Base Rent for the A2 Premises shall remain as set forth in the Second Amendment.

b. Effective as of the May 1, 2018, "Tenant's Share" shall be modified to mean **10.01%**. The "Tenant's Share" is the amount (expressed as a percentage) equal to (a) the aggregate Leasable Square Footage of the Premises divided by (b) the Leasable Square Footage of the Building (rounded to the nearest one-hundredth of one percent (0.01%)).

c. Effective as of May 1, 2018, the "Water Service Charge" set forth in Section 6.1(c) of the Original Lease shall be deemed to be **$3,673.48** per month ($1.48/rsf per annum).

3. **Parking.** Effective as of May 1, 2018, the provisions of the Existing Lease regarding Tenant's parking rights shall be modified as follows:

a. Section 7 of the Summary of Basic Terms in the Original Lease shall be replaced with the following:

7. Tenant's Parking Allocation: seventy-five (75) unassigned parking spaces (2.5 spaces per 1,000 leasable square feet of the Premises), subject to the provisions of Section 2.3.

b. The definition of "Specified Number" in Article I of the Original Lease shall be replaced with the following:

"Specified Number" means seventy-five (75), subject to the provisions of Section 2.3, based on a parking ratio of 2.5 spaces per 1,000 leasable square feet of the Premises.

4. **Expansion Right**.

a. Subject to the provisions of this Section 4, Tenant shall have a one-time right to expand (the "**Expansion Right**") into the entire Released D2 Premises upon the following terms and conditions.

b. Tenant shall have the right to expand into the Released D2 Premises effective November 1, 2020 (the "**Expansion Date**") by giving Landlord written notice of Tenant's exercise of such right (the "**Expansion Notice**") no later than June 1, 2020. If Tenant timely delivers the Expansion Notice, Landlord and Tenant shall execute an amendment to the Lease incorporating the Released D2 Premises into the Premises upon the terms contained in the Lease (including without limitation providing for a Base Rent equal to the Base Rent per rsf of the D2 Remaining Premises and a term that is coterminous with the Lease) within ten (10) business days following Landlord's delivery to Tenant of a form therefor. If Tenant timely delivers an Expansion Notice and executes a mutually agreeable amendment for the Released D2 Premises, Landlord shall deliver full possession of the Released D2 Premises, free of all tenants and occupants, together with Landlord's Equipment therein at such time, to Tenant on the Expansion Date, which Released D2 Premises shall be in substantially the same condition as they were in on the date of this Amendment, reasonable wear and tear excepted.

c. If Tenant fails to timely deliver the Expansion Notice or fails to execute a mutually agreeable amendment for the Released D2 Premises within ten (10) business days of receipt from Landlord, Tenant shall be deemed to have waived its rights with respect to Released D2 Premises and Landlord shall be entitled, but not required, to lease all or any portion of the Released D2 Premises to any party or parties on such terms and conditions, including, without limitation, options to extend the term of such lease and/or expand the premises under such lease, and for such rent as Landlord determines, all in its sole discretion, and the Expansion Right shall be of no further force or effect.

d. Notwithstanding any contrary provision of this Lease, the Expansion Right, and any exercise by Tenant of the Expansion Right shall be void and of no effect unless on the date Tenant timely delivers an Expansion Notice to Landlord and on the commencement date of the amendment for the Released D2 Premises (as applicable): (i) this Lease is in full force and effect, (ii) no Event of Default has occurred under this Lease which remains continuing and uncured after any applicable notice and opportunity to cure and (iii) except with respect to a Permitted Transferee, Tenant shall not have assigned this Lease and Tenant shall not have a sublease or subleases then in effect for more than fifteen percent (15%) of the square footage of the Premises existing immediately prior to the Expansion Date.

5. **Miscellaneous**.

a. This Amendment sets forth the entire agreement between the parties with respect to the matters set forth herein. There have been no additional oral or written representations or agreements. Under no circumstances shall Tenant be entitled to any Rent abatement, improvement allowance, leasehold improvements, or other work to the Premises, or any similar economic incentives that may have

been provided Tenant in connection with entering into the Existing Lease, unless specifically set forth in this Amendment.

b. Except as is expressly modified or amended herein, the provisions, conditions and terms of the Existing Lease shall remain unchanged and in full force and effect.

c. In the case of any inconsistency between the provisions of the Existing Lease and this Amendment, the provisions of this Amendment shall govern and control.

d. Landlord has delivered a copy of this Amendment to Tenant for Tenant's review only and the delivery of it does not constitute an offer to Tenant or an option. Landlord and Tenant shall not be bound by this Amendment until Landlord and Tenant have executed and delivered the same to the other party.

e. The capitalized terms used in this Amendment shall have the same definitions as set forth in the Existing Lease to the extent that such capitalized terms are defined therein and not redefined in this Amendment.

f. Tenant and Landlord hereby represent to each other that Landlord and Tenant have dealt with no broker in connection with this Amendment other than CBRE | New England. Tenant and Landlord agree to indemnify and hold each other, its trustees, members, principals, beneficiaries, partners, officers, directors, employees, mortgagee(s) and agents, and the respective principals and members of any such agents harmless from all claims of any other brokers claiming to have represented Tenant and Landlord in connection with this Amendment.

g. Each signatory of this Amendment represents hereby that he or she has the authority to execute and deliver the same on behalf of the party hereto for which such signatory is acting.

[SIGNATURES ARE ON FOLLOWING PAGE]

IN WITNESS WHEREOF, Landlord and Tenant have duly executed this Third Amendment of Lease as of the Amendment Effective Date as a document under seal.

LANDLORD:

ASTRAZENECA PHARMACEUTICALS LP, a Delaware limited partnership

By: /s/ Kumar Srinivasan

Name: Kumar Srinivasan

Title: Vice President

TENANT:

MORPHIC THERAPEUTIC, INC., a Delaware corporation

By: /s/ Robert Farrell

Name: Robert Farrell

Title: VP Finance & Operations

EXHIBIT A

Location of the Released D2 Premises and Remaining D2 Premises

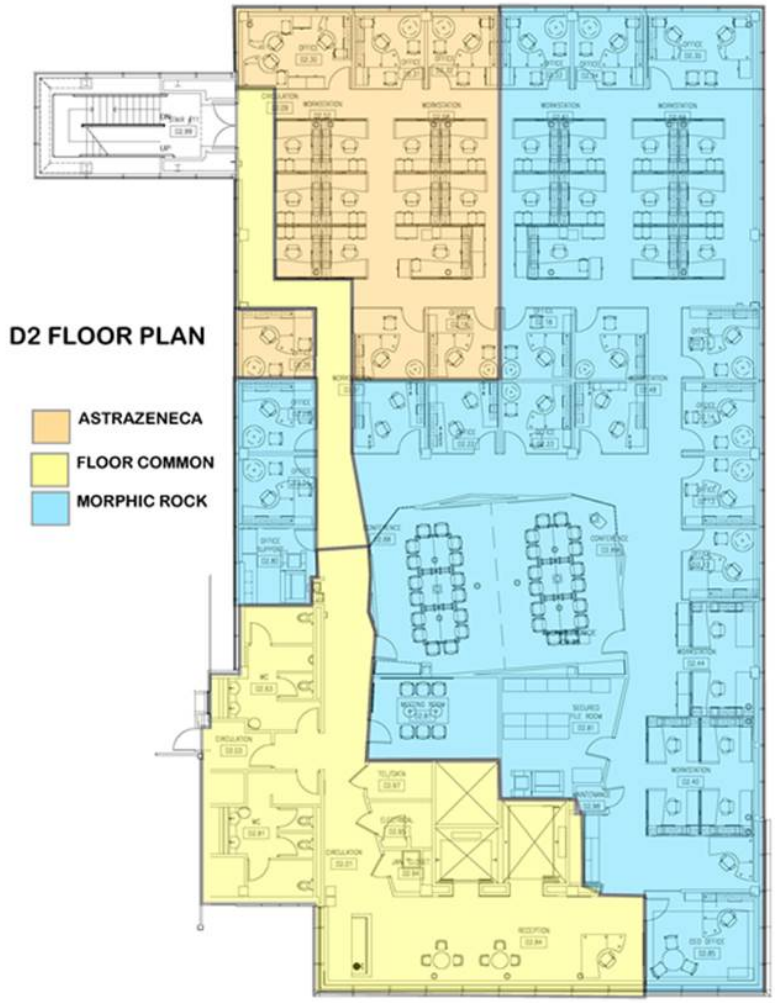


Exhibit 10.10

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

Confidential
Execution Version

RESEARCH COLLABORATION AND OPTION AGREEMENT

between

JANSSEN PHARMACEUTICALS, INC.

and

MORPHIC THERAPEUTIC, INC.

DATED: FEBRUARY 15, 2019

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Schedules:

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

RESEARCH COLLABORATION AND OPTION AGREEMENT

This Research Collaboration and Option Agreement (this "**Agreement**"), dated as of February , 2019 (the "**Effective Date**"), is made by and between Morphic Therapeutic, Inc. having an office at 35 Gatehouse Drive A2, Waltham, MA 02451 92121 ("**Morphic**"), and Janssen Pharmaceuticals, Inc. having an office at 1125 Trenton-Harbourton Road, Titusville, NJ 08560 ("**Janssen**"). Each of Morphic and Janssen may be referred to herein as a "**Party**" or together as the "**Parties**."

RECITALS

Morphic has proprietary integrin technology, including screening assays to identify small molecule compounds that modulate certain targets.

Janssen is developing therapeutic products for the treatment of certain cardiovascular and metabolic diseases and related conditions, including kidney disease.

The Parties wish to collaborate using Janssen's and Morphic's expertise to perform research and other activities, including to discover small molecule compounds that modulate such targets for the treatment of kidney disease.

Morphic desires to grant to Janssen, and Janssen desires to receive from Morphic, certain licenses and rights under the Morphic Technology to discover and exploit such small molecule compounds discovered in the course of such collaboration.

The Parties hereby agree as follows:

1. DEFINITIONS.

The following terms and their correlatives have the following meanings:

1.1 "**Affiliate**" of a Person means any other Person that (directly or indirectly) is controlled by, controls or is under common control with such Person. For the purposes of this Section 1.1 (Affiliate), the term "control" (including the terms "controlled by" and "under common control with") as used with respect to a Person means (a) in the case of a corporate entity, direct or indirect ownership of voting securities entitled to cast more than fifty percent (50%) of the votes in the election of directors or (b) in the case of a non-corporate entity, direct or indirect ownership of more than fifty percent (50%) of the equity interests with the power to direct the management and policies of such entity, *provided* that if local law restricts foreign ownership, control is established by direct or indirect ownership of the maximum ownership percentage that may, under such local law, be owned by foreign interests.

1.2 "**Agreement**" has the meaning set forth in the preamble.

1.3 "**Allowable Overruns**" means, for all Research Programs in the aggregate, any FTE Costs or Out-of-Pocket Costs incurred by or on behalf of a Party in any Calendar Year in the performance of Research Activities under each applicable Research Plan for each Research Program that (a) is not attributable to any breach of this Agreement by Morphic and (b) is in excess of the aggregate amount budgeted for such Research Activities across all Research Budgets for such Calendar Year by an amount not to exceed the greater of [***] of the amount budgeted for such activities across all Research Budgets and [***].

1.4 "**Anti-Corruption Laws**" has the meaning set forth in Section 13.5.4 (Anti-Corruption Laws).

1.5 "**API**" means an active pharmaceutical ingredient.

1.6 "**Applicable Law**" means all applicable laws, rules and regulations (including any rules, regulations, guidelines or other requirements of any Regulatory Authority within the applicable jurisdiction) that may be in effect from time to time.

1.7 "**Applicable Rate**" means (a) the average one-month London Inter-Bank Offering Rate (LIBOR) as reported on the day a payment was due in *The Wall Street Journal* (U.S. Internet version at www.wsj.com under the "Market Data" tab), *plus* [***] annually, or (b) if LIBOR ceases to exist, Janssen's benchmark interest rate that has replaced LIBOR at the applicable time of the late payment.

1.8 "**Approved Labeling**" means, with respect to a Product in a country: (a) the Regulatory Authority-approved full prescribing information for such Product in such country; and (b) the Regulatory Authority-approved labels and other written, printed or graphic materials on any container, wrapper or any package insert that is used with or for such Product in such country.

1.9 "**Assigned Product-Specific Know-How**" has the meaning set forth in Section 9.2.2 (Morphic Assignment of Product-Specific Technology).

1.10 "**Assigned Product-Specific Patents**" has the meaning set forth in Section 9.2.2 (Morphic Assignment of Product-Specific Technology).

1.11 "**Assigned Product-Specific Technology**" has the meaning set forth in Section 9.2.2 (Morphic Assignment of Product-Specific Technology).

1.12 "**Assigned Technology**" has the meaning set forth in Section 9.2.3 (Cooperation and Assistance).

1.13 "**Assigning Party**" has the meaning set forth in Section 9.2.3 (Cooperation and Assistance).

1.14 "**Average Net Selling Price**" means on a product-by-product basis, for a given product, Calendar Year and country, the aggregate Net Sales (expressed in the

applicable local currency) of such product in such Calendar Year in such country, divided by the number of Units of such product for which revenue has been recognized by Janssen in accordance with GAAP in such Calendar Year in such country.

1.15 "**Bankrupt Party**" has the meaning set forth in Section 14.5.2 (Rights in Bankruptcy).

1.16 "**Business Day**" means a day other than Saturday, Sunday or any other bank or other public holiday in New York, New York or Boston, Massachusetts.

1.17 "**Calendar Quarter**" means a financial quarter based on the J&J Universal Calendar for that year and is used by Janssen or its Affiliates for internal and external reporting purposes; *provided*, *however*, that the first Calendar Quarter for the first Calendar Year extends from the Effective Date to the end of the then-current Calendar Quarter and the last Calendar Quarter extends from the first day of such Calendar Quarter until the effective date of the termination or expiration of the Agreement.

1.18 "**Calendar Year**" means a year based on the J&J Universal Calendar for that year (a copy of which for 2019 is attached hereto as **Schedule 1.18**). The last Calendar Year of the Term begins on the first day of the J&J Universal Calendar Year for the year during which termination or expiration of the Agreement will occur, and the last day of such Calendar Year will be the effective date of such termination or expiration. The first Calendar Year will begin on the Effective Date and end on the last day of the first full Calendar Year thereafter.

1.19 "**Change of Control**" means, with respect to a Party, that: (a) any Third Party acquires directly or indirectly the beneficial ownership of any voting security of such Party, or if the percentage ownership of such Third Party in the voting securities of such Party is increased through stock redemption, cancellation or other recapitalization, and immediately after such acquisition or increase such Third Party is, directly or indirectly, the beneficial owner of voting securities representing at least fifty percent (50%) of the total voting power of all of the then outstanding voting securities of such Party; (b) a merger, consolidation, recapitalization or reorganization of such Party is consummated that would result in shareholders or equity holders of such Party immediately prior to such transaction, owning less than fifty percent (50%) of the outstanding voting securities of the surviving entity (or its parent entity) immediately following such transaction; or (c) there is a sale or transfer to a Third Party of all or substantially all of such Party's consolidated assets taken as a whole, through one or more related transactions.

1.20 "**Chemically Similar Compound**" means, with respect to any compound, all other compounds that are contained within the scope of a composition-of-matter claim or use claim of a Patent that is Controlled by either Party, as the case may be, in the United States or a European Patent Organization ("**EPO**") country (including

such a claim of a Patent Cooperation Treaty application designating the United States or EPO) that also claims such compound or use of such compound.

1.21 "**Clinical Trial**" means any clinical trial in humans that is designed to generate data in support or maintenance of an IND or MAA, including any Phase I Clinical Trial, Phase II Clinical Trial, Phase III Clinical Trial, or any post-approval clinical trial in humans.

1.22 "**CMCC License Agreement**" means that certain Exclusive License Agreement dated as of October 7, 2015 by and between Children's Medical Center Corporation and Morphic Rock Holding, LLC, as may be amended from time to time.

1.23 "**Combination Product**" means any Product (a) containing (i) as a single formulation, two or more APIs as components, one of which is a Compound or (ii) in a single package or container and intended for coordinated use, two or more products as components including a Compound and one or more other products (where such other product may include a device or another API) for therapeutic administration or diagnostic use or (b) defined as a "combination product" by the FDA pursuant to 21 C.F.R. §3.2(e) or its foreign equivalent.

1.24 "**Commercialization**" means any and all activities related to the marketing, promotion, distribution, pricing, reimbursement, offering for sale and sale of a pharmaceutical or biologic product and interacting with Regulatory Authorities following receipt of Regulatory Approval in the applicable country or region for such pharmaceutical or biologic product regarding the foregoing, but excluding activities relating to Manufacturing, Development or Medical Affairs. "Commercialize," "Commercializing," and "Commercialized" will be construed accordingly.

1.25 "**Commercially Reasonable Efforts**" or "**CRE**" means [***].

1.26 "**Competing Activities**" has the meaning set forth in Section 2.13 (Exclusivity).

1.27 "**Competitive Infringement**" has the meaning set forth in Section 11.1 (Notification).

1.28 "**Competitive Product**" has the meaning set forth in Section 2.13 (Exclusivity).

1.29 "**Compound**" means (a) with respect to a Target, any small molecule compound that is discovered, screened or optimized by either Party in the performance of Research Activities for such Target under this Agreement, (b) a Chemically Similar Compound with respect to any such Compound described in the foregoing clause (a) and (c) any base form, metabolite, ester, salt form, racemate, stereoisomer, crystalline polymorph, hydrate or solvate of any Compound described in the foregoing clause (a) or clause (b).

1.30 "**Compulsory Sublicensee**" has the meaning set forth in Section 8.10 (Compulsory Licenses).

1.31 "**Confidential Information**" has the meaning set forth in Section 12.1.1 (Confidential Information).

1.32 "**Control**" means, with respect to any Know-How, Patent, Regulatory Submission, or other Intellectual Property, the possession (whether by ownership or license) by a Party or its Affiliates of the ability to grant to the other Party access, ownership, a license or a sublicense as required herein to such Know-How, Patent, Regulatory Submission, or other Intellectual Property without violating the terms of any agreement or other arrangement with any Third Party. Notwithstanding the foregoing, except as otherwise provided in Section 8.9 (Third Party Intellectual Property) and subject to Sections 7.3 (No Other Licenses or Rights), 8.8.3 (Third Party Payments by Janssen) and 8.8.4 (Maximum Payment Adjustments), with respect to any Know-How, Patent, Regulatory Submission or other Intellectual Property (a) that is first acquired or licensed to Morphic after the Effective Date, (b) that is not necessary for the performance of the Research Activities or the practice of the Morphic Platform and (c) that the use, practice or exploitation thereof by or on behalf of Janssen, its Affiliates or sublicensees would require Morphic to pay any additional amounts to the Third Party from whom Morphic acquired, licensed or otherwise obtained such Know-How, Patent, Regulatory Submission or other Intellectual Property ("**Additional Amounts**"), then, following Janssen's exercise of the Option on a Research Program-by-Research Program basis, Morphic will only Control such Know-How, Patent, Regulatory Submission or other Intellectual Property for purposes of the license granted to Janssen for a Research Program under Section 7.2.1 (Exclusive License Grant) if Janssen agrees to pay (if necessary) and does in fact pay all Additional Amounts with respect to Janssen's use, practice or exploitation of such Know-How, Patent, Regulatory Submission or other Intellectual Property.

1.33 "**Covenant Patents**" has the meaning set forth in Section 13.1.3(g) (Morphic Covenants).

1.34 "**Covers**" means, with reference to a particular subject matter at issue and a relevant Patent in a country, that the making, using, selling, offering for sale or importing of such subject matter would fall within the scope of one or more claims within such Patent in such country.

1.35 "**CPI**" means the Consumer Price Index for the US City Average (all times).

1.36 "**CPR Rules**" has the meaning set forth in **Schedule 15.1** (Dispute Resolution).

1.37 "**Currency Hedge Rate**" means the J&J currency hedge rate, which is the result of the effectively performed currency hedging at J&J for the then-current Calendar Year, as updated pursuant to Section 8.15 (Currency Exchange), and will be set

up once a Calendar Year and will remain constant throughout such Calendar Year. The Currency Hedge Rate is calculated as a weighted average hedge rate of the outstanding external foreign currency forward hedge contracts of J&J with Third Party banks.

1.38 "**Deliverables**" means any and all (a) deliverables to be generated or provided by Morphic in connection with the performance of Morphic Research Activities with respect to each Research Program, as specified in the applicable Research Plan and (b) summary descriptions of Intellectual Property that Covers any of the foregoing, which summaries need not include descriptions of Intellectual Property solely related to the Morphic Platform.

1.39 "**Development**" means all internal and external research, development, and regulatory activities related to pharmaceutical or biologic products, including (a) research, non-clinical testing, toxicology, testing and studies, non-clinical and preclinical activities, and clinical trials and (b) preparation, submission, review, and development of data or information for the purpose of submission to a Regulatory Authority to obtain authorization to conduct Clinical Trials and to obtain, support or maintain Regulatory Approval of a pharmaceutical or biologic product, but excluding activities that are directed to Manufacturing, Medical Affairs, or Commercialization. Development will include development and regulatory activities for additional forms, formulations or indications for a pharmaceutical or biologic product after receipt of Regulatory Approval of such product (including label expansion), including Clinical Trials initiated following receipt of Regulatory Approval or any Clinical Trial to be conducted after receipt of Regulatory Approval that was mandated by the applicable Regulatory Authority as a condition of such Regulatory Approval with respect to an approved formulation or indication (such as post-marketing studies and observational studies, if required by any Regulatory Authority in any region in the Territory to support or maintain Regulatory Approval for a pharmaceutical or biologic product in such region). "Develop," "Developing," and "Developed" will be construed accordingly.

1.40 "**Disclosing Party**" has the meaning set forth in Section 12.1.1 (Confidential Information).

1.41 "**Effective Date**" has the meaning set forth in the preamble.

1.42 "**EFT**" has the meaning set forth in Section 8.11.2 (Other Payments).

1.43 "**EMA**" means the European Medicines Agency or any successor agency thereto.

1.44 "**EPO**" has the meaning set forth in Section 1.20 (Chemically Similar Compound).

1.45 "**Existing In-License**" has the meaning set forth in Section 13.1.2(n) (Morphic Representations and Warranties as of the Effective Date).

1.46 "**Exploit**" means to make, have made, use, offer to sell, sell, Develop, Manufacture, perform Medical Affairs activities, Commercialize or otherwise exploit. "Exploitation" will be construed accordingly.

1.47 "**FD&C Act**" means the Federal Food, Drug and Cosmetic Act, as the same may be amended or supplemented from time to time.

1.48 "**FDA**" means the United States Food and Drug Administration and any successor agency thereto.

1.49 "**Field**" means the prevention, treatment and diagnosis of human and animal disease.

1.50 "**First Commercial Sale**" means, with respect to a Product on a country-by-country basis, the first sale by Janssen or its Affiliates Sublicensees or, with respect to a Generic Product, the first sale by a Third Party, in each case, in an arms-length transaction to a Third Party (other than a Sublicensee) for use or consumption by the general public of that Product or Generic Product in a country after all required Regulatory Approvals for commercial sale of that Product or Generic Product have been obtained in such country. A sale of a Product for: (a) clinical study purposes; (b) compassionate use, named patient sales or patient assistance programs; (c) similar uses in a limited number to support Regulatory Approvals, such as test marketing programs or other similar programs or studies (*provided* that the Product is not otherwise generally available for purchase in such country); or (d) early access programs, in each case ((a) — (d)), will not constitute a First Commercial Sale of such Product. In addition, sales of a Product by and between Janssen and its Affiliates or Sublicensees will not constitute a First Commercial Sale.

1.51 "**FTE**" means the equivalent of the work of one (1) full-time employee of Morphic or its Affiliates for one (1) year (consisting of [***] hours per Calendar Year) in performing Development activities hereunder. Any employee of Morphic or any Affiliate who devotes fewer than [***] hours per Calendar Year on the applicable activities shall be treated as an FTE on a *pro-rata* basis, calculated by dividing the actual number of hours worked by such employee on such activities by [***]. Any employee of Morphic or any Affiliate who devotes more than [***] hours per Calendar Year on the applicable activities shall be treated as one (1) FTE. Overtime and work on weekends, holidays and the like, in each case, will not be counted with any multiplier (*e.g.*, time-and-a-half or double time) toward the number of hours that are used to calculate the FTE contribution. The portion of an FTE billable by Morphic for one individual during a given accounting period will be determined by dividing the number of hours worked directly by such individual on the work to be conducted under a Research Plan during such accounting period and the number of FTE hours applicable for such accounting period based on [***] working hours per Calendar Year.

1.52 "**FTE Costs**" means, for any period, the FTE Rate multiplied by the number of FTEs in such period. FTEs will be pro-rated on a daily basis if necessary.

1.53 "**FTE Rate**" means a rate of [***] per FTE per Calendar Year (pro-rated for the period beginning on the Effective Date and ending on the last day of the first Calendar Year of the Term). Overtime, and work on weekends, holidays, and the like will not be counted with any multiplier (e.g., time-and-a-half or double time) toward the number of hours that are used to calculate the FTE contribution. The FTE Rate is "fully burdened" and will include employee salaries and all overhead allocated to such employee's work hereunder. Beginning on January 1, 2020 and on January 1 of each subsequent Calendar Year during the Term, the FTE Rate is subject to annual adjustment by the percentage increase or decrease in the CPI comparing the levels of the CPI as of December 31 of the most recently completed Calendar Year.

1.54 "**GAAP**" U.S. generally accepted accounting principles, consistently applied.

1.55 "**Generic Product**" means with respect to a given Product in a given country in the Territory, a product that (a) contains the same active pharmaceutical ingredient as such Product and is approved in reliance, in whole or in part, on a prior Regulatory Approval of such Product, (b) is sold or marketed for sale in such country by a Third Party that has not obtained the rights to market or sell such product as a Sublicensee, Subcontractor or Third Party Distributor of Janssen or any of its Affiliates, Sublicensees or Subcontractors with respect to such Product and (c) is considered by the applicable Regulatory Authority in such country to be therapeutically equivalent to, or interchangeable with, such Product, such that, in the U.S., the product may be substituted for the Product at the point of dispensing without any intervention by the prescribing physician in such country.

1.56 "**GLP**" means all applicable good laboratory practice standards, including, as applicable, as set forth in the then-current good laboratory practice standards promulgated or endorsed by the FDA and the equivalent Applicable Law in the region in the Territory, each as may be amended and applicable from time to time.

1.57 "**Governmental Authority**" means any court, tribunal, arbitrator, agency, commission, department, ministry, official, authority or other instrumentality of any national, state, county, city or other political subdivision.

1.58 "**Identified Research Activity Patents**" has the meaning set forth in Section 8.9.1 (Morphic Research Activities).

1.59 "**IND**" means an Investigational New Drug application required pursuant to 21 C.F.R. Part 312 or any comparable filings outside of the United States required to commence human clinical trials in such country or region, and all supplements or amendments that may be filed with respect to the foregoing.

1.60 "**IND-Enabling Study**" means a toxicology study (a) that is conducted using applicable GLP, (b) that is conducted in one or more species and that satisfies both applicable regulatory requirements and Janssen internal requirements and (c) the data and results from which are intended to meet the standard necessary for submission thereof as part of an IND with the applicable Regulatory Authority.

1.61 "**IND-Enabling Study Completion Date**" has the meaning set forth in Section 3.3 (IND-Enabling Study Report).

1.62 "**IND-Enabling Study Report**" means, with respect to one or more IND-Enabling Studies, an integrated report containing the pharmacology, toxicology, bioanalytical and pharmacokinetic data generated from such IND-Enabling Studies.

1.63 "**In-Licenses**" has the meaning set forth in Section 13.1.3(d) (Morphic Covenants).

1.64 "**Indemnitee**" has the meaning set forth in Section 13.3.3 (Procedure).

1.65 "**Indemnitor**" has the meaning set forth in Section 13.3.3 (Procedure).

1.66 "**Initiation**" means (a) with respect to a Phase I Clinical Trial, the fifth dosing of a human subject in such Phase I Clinical Trial; *provided* that if such Phase I Clinical Trial is halted for any reason other than for patient health and safety (as determined by the applicable data safety monitoring board or other applicable oversight committee, which such board or committee may be a Janssen-Operated Monitoring Board, in accordance with Applicable Law and such board or committee has notified the FDA that Janssen has halted such Phase I Clinical Trial), then "Initiation" shall mean the first dosing of a human subject in such Phase I Clinical Trial and (b) with respect to a Phase II Clinical Trial or Phase III Clinical Trial, the first dosing of a human subject in such Clinical Trial (as applicable).

1.67 "**Intellectual Property**" means all Patents, rights to Inventions, copyrights, design rights, trademarks, trade secrets, Know-How and all other intellectual property rights (whether registered or unregistered) and all applications and rights to apply for any of the foregoing, anywhere in the world.

1.68 "**Invention**" means any process, method, utility, formulation, composition of matter, article of manufacture, material, creation, discovery or finding, or any improvement thereof, that is made, conceived, discovered or otherwise generated, whether patentable or not.

1.69 "**Janssen**" has the meaning set forth in the preamble.

1.70 "**Janssen Compound**" means any Compound that (a) is not a Morphic Compound and (b) has been provided to Morphic under this Agreement pursuant to Section 2.8 (Janssen Compounds).

1.71 "**Janssen Know-How**" means any Know-How, other than Joint Know-How, Controlled by Janssen or any of its Affiliates that is (a) necessary or useful for Morphic to conduct any Morphic Research Activities under any Research Plan and (b) actually provided or disclosed by Janssen to Morphic for use in the performance of such Morphic Research Activities.

1.72 "**Janssen-Operated Monitoring Board**" means, with respect to a Clinical Trial, an applicable data safety monitoring board or oversight committee that is operated by or includes personnel of Janssen or its Affiliates.

1.73 "**Janssen Patents**" means any Patents Controlled by Janssen or any of its Affiliates that Cover any Janssen Know-How.

1.74 "**Janssen Product**" means a Product that contains a Janssen Compound as an API.

1.75 "**Janssen Product Invention**" has the meaning set forth in Section 9.1.2(a) (Other Inventions).

1.76 "**Janssen Prosecuted Patents**" has the meaning set forth in Section 10.5 (Janssen Prosecution and Maintenance of Patents).

1.77 "**Janssen Research Activities**" has the meaning set forth in Section 2.1.2 (Janssen Research Activities).

1.78 "**Janssen Technology**" means the Janssen Know-How, the Janssen Patents and Janssen's interest in the Joint Technology.

1.79 "**Janssen Terminated Product Agreement**" has the meaning set forth in Section 3.7.2 (Effects of ROFN Exercise).

1.80 "**Joint Finance Committee**" or "**JFC**" has the meaning set forth in Section 4.5 (Joint Finance Committee).

1.81 "**Joint Invention**" has the meaning set forth in Section 9.1.2(a) (Other Inventions).

1.82 "**Joint Know-How**" has the meaning set forth in Section 9.1.2(a) (Other Inventions).

1.83 "**Joint Patent**" has the meaning set forth in Section 9.1.2(a) (Other Inventions).

1.84 "**Joint Research Committee**" or "**JRC**" has the meaning set forth in Section 4.1 (Joint Research Committee).

1.85 "**Joint Technology**" has the meaning set forth in Section 9.1.2 (Other Inventions).

1.86 "**JRC Chair**" has the meaning set forth in Section 4.2 (Committee Chair).

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

1.87 "**JRD**" has the meaning set forth in Section 8.16.3 (Paying Agent).

1.88 "**Jurisdictions**" has the meaning set forth in Section 10.1 (Morphic Prosecution and Maintenance of Patents).

1.89 "**J&J**" means Johnson & Johnson.

1.90 "**Know-How**" means all commercial, technical, scientific and other know-how and information, trade secrets, knowledge, technology, methods, processes, practices, formulae, instructions, skills, techniques, procedures, experiences, ideas, technical assistance, designs, drawings, assembly procedures, computer programs, specifications, data and results not generally known to the public (including biological, chemical, pharmacological, toxicological, pharmaceutical, physical and analytical, pre-clinical, clinical, safety, manufacturing and quality control data and know-how, including study designs and protocols), in all cases, whether or not patentable, in written, electronic or any other form now known or hereafter developed.

1.91 "**Late Lead Optimization Activities**" means, with respect to a Research Program, the Research Activities designated in the applicable Research Plan as "Late Lead Optimization Activities" for such Research Program, which activities are intended to demonstrate that such Compounds are suitable for further optimization as potential lead candidates for such Research Program following the completion of Lead Optimization Activities for such Research Program. The activities set forth on **Schedule 1.91** will in all cases be "Late Lead Optimization Activities" for purposes of this Agreement (including in each Research Plan).

1.92 "**Late Lead Optimization Fee**" has the meaning set forth in Section 8.3 (Late Lead Optimization Fee).

1.93 "**Lead Candidate Guidelines**" means, with respect to a given Research Program, the guidelines for Compounds that are the subject of such Research Program designated in the Research Plan as "Lead Candidate Guidelines", which success criteria are intended to serve as suggested guidelines for determining whether such Compounds are suitable for further optimization as a potential development candidates for such Research Program.

1.94 "**Lead Optimization Activities**" means, with respect to a Research Program, the Research Activities designated in the applicable Research Plan as "Lead Optimization Activities" for such Research Program, which such activities are intended to demonstrate that such Compounds are suitable for initial optimization as potential lead candidates for such Research Program.

1.95 "**Liabilities"** has the meaning set forth in Section 13.3.1 (Indemnification by Morphic).

1.96 "**Licensed Compound**" means, on a Research Program-by-Research Program basis with respect to a Target via the applicable Mechanism of Action a Compound that is demonstrated by either Party or its respective Affiliates to have Threshold Activity and Selectivity against such Target via such Mechanism of Action.

1.97 "**MAA**" means any new drug application or other marketing authorization application, in each case, filed with the applicable Regulatory Authority in a country or other regulatory jurisdiction (and all supplements and amendments thereto), which application is required to commercially market or sell a pharmaceutical or biologic product in such country or jurisdiction, including (a) all New Drug Applications and Biologics License Applications submitted to the FDA in the United States in accordance with the FD&C Act with respect to a biologic or pharmaceutical product, (b) all MAAs submitted to (i) the EMA under the centralized EMA filing procedure in the EU or (ii) a Regulatory Authority in any EU country if the centralized EMA filing procedure is not used to gain Regulatory Approval in such country, (c) Japanese New Drug Application submitted to the Ministry of Health, Labor and Welfare in Japan or (d) any analogous application or submission with any Regulatory Authority in any other country or regulatory jurisdiction.

1.98 "**Major European Country**" means any of [***].

1.99 "**Major Market Country**" means any of the [***] or a Major European Country.

1.100 "**Manufacture**" means activities that are directed to manufacturing, processing, packaging, labeling, filling, finishing, assembly, quality assurance, quality control, testing, and release, shipping or storage of any pharmaceutical or biologic product (or any components or process steps involving any product or any companion diagnostic), placebo or comparator agent, as the case may be, including process development, qualification, validation, scale-up, pre-clinical, clinical and commercial manufacture and analytic development, product characterization and stability testing, but excluding activities that are directed to Development, Commercialization or Medical Affairs. "Manufacturing" and "Manufactured" will be construed accordingly.

1.101 "**Mechanism of Action**" means, with respect to a target, modulation of such target by a compound via a given mechanism of action (whether inhibition or activation).

1.102 "**Medical Affairs**" means activities conducted by a Party's medical affairs departments (or, if a Party does not have a medical affairs department, the equivalent function thereof), including communications with key opinion leaders, medical education, symposia, advisory boards (to the extent related to medical affairs or clinical guidance), activities performed in connection with patient registries and other medical programs and communications, including educational grants, research grants (including conducting investigator-initiated studies) and charitable donations to the extent related to medical affairs and not to other

activities that do not involve the promotion, marketing, sale or other Commercialization of products and are not conducted by a Party's medical affairs (or equivalent) departments.

1.103 "**Morphic**" has the meaning set forth in the preamble.

1.104 "**Morphic Compound**" means a Compound that (a) is analoged around or optimized based on a hit compound identified through screening Morphic's proprietary compound libraries under a Research Program (or Terminated Program), (b) modulates a Target through the applicable Mechanism of Action set forth in the Research Plan for such Research Program and (c) is delivered by Morphic to Janssen for the purpose of conducting the applicable Research Program.

1.105 "**Morphic Internal Program**" means, with respect to a target and a given Mechanism of Action that Janssen proposes to select as a potential Replacement Target MoA in accordance with the terms and conditions of this Agreement, a *bona fide* Development or Commercialization program with respect to which (a) Morphic or its Affiliates have assigned FTEs to perform Development or Commercialization activities under a detailed written plan and allocated resources to the performance of such activities in accordance with an associated budget (and Morphic is at such time actively performing such Development or Commercialization activities with respect to such potential Replacement Target MoA) and (b) Morphic or its Affiliates have identified a compound that modulates the applicable target via the applicable Mechanism of Action, in each case, as in such potential Replacement Target MoA and shown that such candidate has activity in one or more in-vitro functional cell-based assays against such a target via a Mechanism of Action.

1.106 "**Morphic Know-How**" means any and all Know-How, other than Joint Know-How, that (a) Morphic or any of its Affiliates owns or Controls and (b) is necessary or useful to (i) conduct any Research Activities or (ii) Exploit any Compound or Product, including all Morphic Platform Inventions, but expressly excluding all Know-How licensed to Morphic under the CMCC License Agreement.

1.107 "**Morphic Lead Optimization Activities**" means, with respect to a Research Program, the Lead Optimization Activities for such Research Program that are assigned to Morphic in the applicable Research Plan for such Research Program.

1.108 "**Morphic Patent**" means any and all Patents, other than Joint Patents, that (a) Morphic or any of its Affiliates owns or Controls and (b) are necessary or useful to (i) conduct any Research Activities or (ii) Exploit any Compound or Product, including all Morphic Platform Patents and Morphic Platform and Product Patents, but expressly excluding all Patents licensed to Morphic under the CMCC License Agreement. The Morphic Patents existing as of the Effective Date are listed in **Schedule 1.108** (Morphic Patents as of the Effective Date) and include all Morphic Platform Patents, Morphic Platform and Product Patents and Product-Specific

Patents (until such time as such Product-Specific Patents become Assigned Product-Specific Patents).

1.109 "**Morphic Platform**" means Morphic's technology directed to (a) stable integrin conformations generally (and not integrin conformations that inhibit or activate any Target), (b) methods of producing or generating the same or (c) methods of inhibiting or activating integrins generally (and not related to inhibiting or activating any Target) through binding of specific integrin conformations with molecular fragments, in each case ((a) — (c)), in *in vitro* and *in silico* modeling. The Morphic Platform includes all Morphic Platform Inventions.

1.110 "**Morphic Platform Invention**" has the meaning set forth in Section 9.1.1 (Improvements to Morphic Technology).

1.111 "**Morphic Platform Patents**" means any Morphic Patents or Joint Patents that Cover the Morphic Platform and do not Cover any Compound or Product, excluding Morphic Platform and Product Patents. The Morphic Platform Patents existing as of the Effective Date are listed under a separate heading in **Schedule 1.108 (**Morphic Patents as of the Effective Date).

1.112 "**Morphic Platform and Product Patents**" means any Patents that Cover both (a) the Morphic Platform and (b) (i) any Licensed Compound or Product incorporating any such Licensed Compound, (ii) any composition (*e.g.*, a pharmaceutical composition) containing any such Licensed Compound or Product described in clause (i) above, (iii) any use or a method of using any such Licensed Compound, Product or composition described in clauses (i) or (ii) above or (iv) any method for Manufacturing any such Licensed Compound, Product or composition described in clauses (i) and (ii) above.

1.113 "**Morphic Prosecuted Patents**" has the meaning set forth in Section 10.1 (Morphic Prosecution and Maintenance of Patents).

1.114 "**Morphic Research Activities**" has the meaning set forth in Section 2.1.1 (Morphic Research Activities).

1.115 "**Morphic Research Activity Third Party Payments**" has the meaning set forth in Section 8.9.2 (Morphic Research Activity Third Party Payments).

1.116 "**Morphic Technology**" means the Morphic Patents, the Morphic Know-How and Morphic's interest in the Joint Technology.

1.117 "**Morphic's Knowledge**" means the actual knowledge, after reasonable investigation, of the following: Morphic's [***] and [***].

1.118 "**Net Sales**" means [***].

Net Sales will include [***] only if the applicable Product is sold at a price greater than the applicable cost of goods (as determined in accordance with GAAP). Net Sales will not include [***]. In addition, Net Sales will not include [***].

All aforementioned deductions will only be allowable to the extent they are commercially reasonable by Janssen and will be determined, on a country-by-country basis, as incurred in the ordinary course of business in type and amount verifiable based on Janssen's and its Affiliates' reporting system. All such discounts, allowances, credits, rebates and other deductions will be fairly and equitably allocated between the Product and other products of Janssen and its Affiliates and Sublicensees such that the Product does not bear a disproportionate portion of such deductions.

If a Product is sold as part of a Combination Product in a given country in the Territory, then Net Sales for such Combination Product in such country will be determined as follows:

A. In the event that any Product is sold in the form of Combination Products containing one or more other products, if the Licensed Compound is sold separately and all other products in such Combination Product are sold separately, then Net Sales for the determination of royalties of Combination Products will be calculated by [***].

B. If the Licensed Compound is sold separately, but not all other products in a Combination Product are sold separately, then Net Sales for the determination of royalties of Combination Products will be calculated by [***].

C. If the Licensed Compound is not sold separately, but all other products in a Combination Product are sold separately, then Net Sales for such Combination Product will be calculated by [***].

D. If Net Sales of a Combination Product cannot be determined using the methods above (A — C), then the Parties will negotiate in good faith, at the latest six (6) months before the expected launch of such Combination Product, an allocation of Net Sales of such Combination Product to the respective API components or product components thereof, as the case may be, based on [***], and if the Parties are unable to agree on such a reasonable allocation no later than [***] prior to the estimated launch date of such Combination Product, then Net Sales of such Combination Product will be calculated based on [***].

1.119 "**New License Agreement**" has the meaning set forth in Section 7.2.5 (Sublicense Continuation upon Termination).

1.120 "**Occupied MoA**" has the meaning set forth in Section 2.6.3 (Occupied MoAs).

1.121 "**Option**" has the meaning set forth in Section 3.1 (Option Grant).

1.122 "**Option Exercise Fee**" has the meaning set forth in Section 8.4 (Option Exercise Fee).

1.123 "**Option Period**" means, on a Research Program-by-Research Program basis and subject to Section 3.6 (Termination of Option), the period of time commencing on the Effective Date and continuing until the end of the Research Term with respect to a Research Program, as determined in accordance with Section 2.4.2 (Research Term), unless, prior to the end of such Research Term, IND-Enabling Studies for such Research Program are commenced, in which case, the Option Period with respect to such Research Program will continue until the date that is [***] following the IND-Enabling Study Completion Date for such Research Program, in each case, subject to any extension of such period provided under Section 3.5 (Extension of Option Period), not to exceed [***] following the end of the Research Term with respect to such Research Program.

1.124 "**Orange Book**" has the meaning set forth in Section 11.3 (Patent Listing).

1.125 "**Out-of-Pocket Costs**" means, with respect to the Research Activities to be performed under a Research Plan and the corresponding Research Budget hereunder, direct expenses paid by either Party or its Affiliates to Third Parties and specifically identifiable in the applicable Research Budget and incurred to conduct such activities in the applicable Research Budget, including payments to Subcontractors, in each case, pursuant to any Research Plan.

1.126 "**Owning Party**" has the meaning set forth in Section 9.2.3 (Cooperation and Assistance).

1.127 "**Paragraph IV Certification**" has the meaning set forth in Section 11.4 (Enforcement of Listed Patents).

1.128 "**Paragraph IV Proceeding**" has the meaning set forth in Section 11.4.2 (Enforcement of Listed Patents).

1.129 "**Partnering Notice**" has the meaning set forth in Section 3.7.4 (Passed Terminated Janssen Product Partnering).

1.130 "**Party**" has the meaning set forth in the preamble.

1.131 "**Passed Terminated Janssen Product**" has the meaning set forth in Section 3.7.1 (ROFN Exercise Notice).

1.132 "**Patent**" means any and all (a) patents, (b) pending patent applications, including, all provisional applications, substitutions, continuations, continuations-in-part, divisions and renewals and all patents granted thereon, (c) all patents-of-addition, reissues, reexaminations and extensions or restorations by existing or future extension or restoration mechanisms, including, supplementary protection certificates or the equivalent thereof, (d) inventor's certificates, (e) any other form

of government-issued right substantially similar to any of the foregoing and (f) all U.S. and foreign counterparts of any of the foregoing.

1.133 "**Per Product Annual Net Sales**" has the meaning set forth in Section 8.7 (Royalties).

1.134 "**Person**" means any individual, firm, corporation, partnership, limited liability company, trust, business trust, joint venture, Governmental Authority, association or other entity.

1.135 "**Phase I Clinical Trial**" means a clinical trial generally consistent with 21 C.F.R.§ 312.21(a) (or the corresponding foreign regulations) that is required for Regulatory Approval of a product, that the FDA or other applicable Regulatory Authority permits to be conducted under an open IND and that is prospectively designed to gain evidence of the safety, tolerability and pharmacological activity or pharmacokinetics.

1.136 "**Phase II Clinical Trial**" means a clinical trial generally consistent with 21 CFR §312.21(b) (or the corresponding foreign regulations) that is required for receipt of Regulatory Approval of a product, that the FDA or other applicable Regulatory Authority permits to be conducted under an open IND and that is prospectively designed to generate sufficient data (if successful) to commence a Phase III Clinical Trial for such product and that is conducted to evaluate the effectiveness and the appropriate dose range of a product for a particular indication or indications in patients with the disease or condition under study and to determine the common short-term side effects and risks.

1.137 "**Phase III Clinical Trial**" means a clinical trial generally consistent with 21 CFR §312.21(c) (or the corresponding foreign regulations) that is required for receipt of Regulatory Approval of a product, that the FDA or other applicable Regulatory Authority permits to be conducted under an open IND and that is performed to gain evidence with statistical significance of the efficacy of such product in a target population and to gather additional information of safety for such product that is needed to evaluate the overall benefit-risk relationship of such product, to form the basis for approval of an MAA by a Regulatory Authority and to provide an adequate basis for physician labeling, in each case, without the need for additional Clinical Trials to generate additional data and information. Notwithstanding anything to the contrary set forth in this Agreement, treatment of patients as part of an expanded access program, compassionate sales or use program (including named patient program or single patient program), or an indigent program, in each case, will not be included in determining whether or not a clinical trial is a Phase III Clinical Trial or whether a patient has been dosed thereunder unless (and only if) such treatment is conducted as part of such Phase III Clinical Trial and the related clinical trial protocol.

1.138 "**POC Clinical Trial**" means a clinical trial generally consistent with 21 CFR § 312.21(b) (or the corresponding foreign regulations that is required for receipt of Regulatory Approval of a product and the FDA or other applicable Regulatory Authority permits to be conducted under an open IND), for which (a) the principal purpose of which is to make a preliminary determination about such product's efficacy and that is intended to explore one or more doses, and is prospectively designed to generate sufficient data (if successful) of clinical activity and safety in such patient population; and (b) such clinical trial shall be a randomized and placebo controlled clinical trial unless the FDA or other applicable Regulatory Authority indicates (based upon meeting notes, special protocol assessment or other written acknowledgement) that the FDA or other applicable Regulatory Authority will accept a single arm clinical trial for Regulatory Approval.

1.139 "**Pre-Existing Restriction**" has the meaning set forth in Section 2.6.3 (Occupied MoAs).

1.140 "**Product**" means any formulation, presentation or dosage form of a pharmaceutical product containing a Licensed Compound as an active pharmaceutical ingredient, including Combination Products. All Products containing the same Licensed Compound(s), or its or their bioequivalents, regardless of dosage form or mode of administration are considered a single Product for the purpose of milestone calculations hereunder.

1.141 "**Product-Specific Patents**" means any Morphic Patents or Joint Patents that Cover (a) any Licensed Compound or Product incorporating any such Licensed Compound, (b) any composition (*e.g.*, a pharmaceutical composition) containing any such Licensed Compound or Product, (c) any use or a method of using any such Licensed Compound, Product, or composition or (d) any method for Manufacturing any such Licensed Compound, Product or composition, but, in each case ((a) through (d)), do not Cover the Morphic Platform; and for clarity, all Morphic Platform Patents and Morphic Platform and Product Patents are excluded from Product-Specific Patents. The Product-Specific Patents existing as of the Effective Date are listed under a separate heading in **Schedule 1.108** (Morphic Patents as of the Effective Date).

1.142 "**Prosecution and Maintenance**" means, with regards to a particular Patent, the preparation, filing, prosecution and maintenance of such Patent, as well as re-examinations, reissues and the like with respect to such Patent, together with the conduct of interferences, the defense of oppositions and other similar proceedings with respect to that Patent. When used as a verb, "Prosecute and Maintain" means to engage in Prosecution and Maintenance.

1.143 "**Prosecution Term**" has the meaning set forth in Section 10.1 (Morphic Prosecution and Maintenance of Patents).

1.144 "**Protocol**" has the meaning set forth in **Schedule 15.1** (Dispute Resolution).

1.145 "**Receiving Party**" has the meaning set forth in Section 12.1.1 (Confidential Information).

1.146 "**Region**" means each of the following: [***] and [***].

1.147 "**Regulatory Approval**" means, with respect to a particular country or other regulatory jurisdiction, any approval of an MAA or other approval, product or establishment license, registration, or authorization of any Regulatory Authority necessary for the commercial marketing or sale of a pharmaceutical or biologic product in such country or other regulatory jurisdiction, including, in each case, Reimbursement Approval in those countries and jurisdictions where required under Applicable Law.

1.148 "**Regulatory Authority**" means any applicable Governmental Authority with jurisdiction or authority over the Development, Manufacture, Commercialization, or other Exploitation (including Regulatory Approval or Reimbursement Approval) of pharmaceutical or biologic products in a particular country or other regulatory jurisdiction, and any corresponding national or regional regulatory authorities, including [***].

1.149 "**Regulatory Submissions**" means any filing, application, or submission with any Regulatory Authority in support of the Development, Manufacture, Commercialization or other Exploitation of a pharmaceutical or biologic product (including to obtain, support or maintain Regulatory Approval from that Regulatory Authority), and all correspondence or communication with or from the relevant Regulatory Authority, as well as minutes of any material meetings, telephone conferences or discussions with the relevant Regulatory Authority. Regulatory Submissions include all INDs, MAAs and other applications for Regulatory Approval.

1.150 "**Reimbursement Approval**" means an approval, agreement, determination or other decision by the applicable Governmental Authority that establishes prices charged to end-users for pharmaceutical or biologic products at which a particular pharmaceutical or biologic product will be reimbursed by the Regulatory Authorities or other applicable Governmental Authorities in the Territory.

1.151 "**Replacement Decision**" has the meaning set forth in Section 2.6.1 (Replacement Decision).

1.152 "**Replacement Target MoA**" has the meaning set forth in Section 2.6.1 (Replacement Decision).

1.153 "**Research Activities**" has the meaning set forth in Section 2.1.2 (Janssen Research Activities).

1.154 "**Research Budget**" has the meaning set forth in Section 2.2.2 (Research Budgets).

1.155 "**Research Plan**" has the meaning set forth in Section 2.2.1 (Research Plans).

1.156 "**Research Program**" means, on a Target-by-Target and Mechanism of Action-by-Mechanism of Action basis, the program of Research Activities undertaken for a given Target and Mechanism of Action (including any Replacement Target MoA) as set forth in Section 2.1 (Research Programs) and under the applicable Research Plan.

1.157 "**Research Program Fee**" has the meaning set forth in Section 8.2 (Research Program Fee).

1.158 "**Research Term**" has the meaning set forth in Section 2.4.2 (Research Term).

1.159 "**Research Term Outside Date**" has the meaning set forth in Section 2.4.2 (Research Term).

1.160 **"Residual Information**" has the meaning set forth in Section 7.2.3 (Residual Memory and Firewall).

1.161 "**Results**" means any and all (a) raw data, processed data, notebook records, documents, reports, information, results, summaries, presentations, analyses, computer models, written, printed, graphic, video and audio recorded information contained in any computer database or computer readable form and other results supplied to or generated by or on behalf of a Party or its Affiliates or Sublicensees in the performance of activities under this Agreement or with respect to any Terminated Janssen Product after the Term and (b) Intellectual Property that claims or otherwise covers any of the foregoing.

1.162 "**Retained Janssen Patents**" means, with respect to a Terminated Program, any Assigned Product-Specific Patents or Janssen Patents, in each case, existing as of the applicable effective date of termination of this Agreement with respect to such Terminated Program that (a) Cover both (i) one or more Licensed Compounds or Products that are the subject of such Terminated Program and (ii) one or more Licensed Compounds or Products that are the subject of one or more Research Programs that are not Terminated Programs and (b) are not assigned by Janssen to Morphic pursuant to Section 14.6.2(a).

1.163 "**ROFN**" has the meaning set forth in Section 3.7.1 (ROFN Exercise Notice).

1.164 "**ROFN Availability Notice**" has the meaning set forth in Section 3.7.1 (ROFN Exercise Notice).

1.165 "**ROFN Exercise Notice**" has the meaning set forth in Section 3.7.1 (ROFN Exercise Notice).

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1.166 "**Royalty-Bearing Patents**" means, with respect to a given Product in a country, the Valid Claims within the Morphic Patents or Product-Specific Patents Covering (a) [***]or (b) [***].

1.167 "**Royalty Sublicensee**" means (a) [***] and (b) [***].

1.168 "**Royalty Term**" means, on a Product-by-Product and country-by-county basis, the period commencing on the First Commercial Sale of a Product in a country and expiring upon the later of (a) the expiration of the last Valid Claim within the Royalty-Bearing Patents Covering such Product in such country and (b) ten (10) years after the First Commercial Sale of such Product in such country.

1.169 "**Subcontractor**" means a Third Party contractor engaged by a Party to perform certain obligations or exercise certain rights of such Party under this Agreement on a fee-for-service basis (including contract research organizations, contract manufacturing organizations and Third Party Distributors), excluding all Sublicensees.

1.170 "**Sublicensee**" means any Third Party to whom a Party or any of its Affiliates grants a sublicense of the rights granted to such Party hereunder to perform Research Activities or Exploit Products, including all Royalty Sublicensees and Compulsory Sublicensees, excluding all Subcontractors.

1.171 "**Synthesized Compounds**" has the meaning set forth in Section 2.13.2 (Exclusivity).

1.172 "**Target**" means [***].

1.173 "**Tax**" or "**Taxes**" means any present or future taxes, levies, imposts, duties, charges, assessments or fees of any nature (including any interest thereon).

1.174 "**Term**" has the meaning set forth in Section 14.1 (Term).

1.175 "**Terminated Janssen Product**" means, with respect to a Terminated Program, any Janssen Compound or Janssen Product that is the subject of such Terminated Program.

1.176 "**Terminated Product Package**" means, with respect to a Passed Terminated Janssen Product, the Results and other information or data generated by or on behalf of Morphic with respect to any Development, Manufacture, Commercialization or other Exploitation of such Passed Terminated Janssen Product (including from all pre-clinical studies and Clinical Trials), as applicable to the stage of Development or Commercialization of such Terminated Janssen Product, along with any Regulatory Submissions provided by or on behalf of Morphic or its Affiliates to any Regulatory Authority for such Terminated Janssen Product.

1.177 "**Terminated Program**" means: (a) any Research Program with respect to which Janssen did not exercise an Option in accordance with Section 3.2 (Option Exercise) prior to the expiration of the Option Period for such Research Program, (b) any Research Program that is the subject of termination of this Agreement or for which Janssen exercises its remedy in lieu of termination as set forth in Section 14.7 (Alternative Remedy in Lieu of Termination) or (c) any Research Program for which the Target that is the subject of such Research Program is replaced pursuant to a Replacement Decision.

1.178 "**Territory**" means worldwide.

1.179 "**Third Party**" means any Person other than Morphic, Janssen and their respective Affiliates.

1.180 "**Third Party Claim**" has the meaning set forth in Section 13.3.1 (Indemnification by Morphic).

1.181 "**Third Party Distributor**" means, with respect to a country, [***].

1.182 "**Threshold Activity and Selectivity**" means, with respect to a Compound directed to a Target via a given Mechanism of Action, that such Compound has at least the activity and selectivity profile set forth on **Schedule 1.182** (Threshold Activity and Selectivity) for the modulation of such Target via such Mechanism of Action.

1.183 "**Title 11**" has the meaning set forth in Section 14.5.2 (Rights in Bankruptcy).

1.184 "**Trademark**" means any word, name, symbol, color, designation or device or any combination thereof, whether registered or unregistered, including any trademark, trade dress, service mark, service name, brand mark, trade name, brand name, logo or business symbol.

1.185 "**United States**" or "**U.S.**" means the United States of America, including its territories and possessions, the District of Columbia and Puerto Rico.

1.186 "**Units**" means, with respect to a Product, the equivalent of one unit of formulation of such Product; for example, one unit is one pill.

1.187 "**Unresolved Issue**" has the meaning set forth in Section 15.1 (Discussion by Executive Officers; Arbitration).

1.188 "**Upfront Payment**" has the meaning set forth in Section 8.1 (Upfront Payment; Research Program Fee).

1.189 "**Valid Claim**" means a claim of (a) any issued and unexpired patent whose validity, enforceability, or patentability has not been affected by any of the following: (i) irretrievable lapse, abandonment, revocation, dedication to the public,

or disclaimer; or (ii) a holding, finding, or decision of invalidity, unenforceability, or non-patentability; or (b) a pending patent application that is filed and prosecuted in good faith and no more than [***] have elapsed from its earliest priority date. For clarity, if a claim in a patent application that has been pending for more than [***] from its earliest priority date subsequently issues, then such claim shall be considered a Valid Claim as of the date of such issuance (to the extent that such claim thereafter satisfies the foregoing clause (a)).

2. RESEARCH PROGRAM; OPTION EXERCISE AND EXCLUSIVITY.

2.1. **Research Programs**.

2.1.1. **Morphic Research Activities**. For each Research Program with respect to a Target and the applicable Mechanism of Action, during the Research Term for such Research Program, Morphic will (a) perform all activities assigned to it under the applicable Research Plan, including the Lead Optimization Activities for those Compounds identified under such Research Plan that modulates the applicable Target via the applicable Mechanism of Action and (b) use Commercially Reasonable Efforts to prepare and deliver all Deliverables and Results for each Research Program in accordance with this Agreement and the applicable Research Plan during the Option Period for such Research Program, including the preparation of all reports in accordance with Section 2.5 (Late Lead Optimization Activities) and Section 2.8 (Research Reports) (collectively ((a) and (b)), together with any other activity expressly set forth under this Agreement to be performed by or on behalf of Morphic during the Research Term, the "**Morphic Research Activities**"). Morphic will perform, or have performed, all Morphic Research Activities in accordance with the applicable Research Plan and the applicable Research Budget for such Target and otherwise in accordance with this Agreement. Morphic will not perform any activities with respect to a Research Program or any Target (including the Exploitation of any Compound that modulates such Target via the applicable Mechanism of Action) that are not set forth in the applicable Research Plan for the applicable Research Program.

2.1.2. **Janssen Research Activities.** For each Research Program with respect to a Target, during the Option Period for such Research Program, Janssen (a) will perform all activities assigned to it under the applicable Research Plan for such Research Program (including the IND-Enabling Studies for Compounds that are the subject of the applicable Research Program) and (b) may elect to lead other activities with respect to each Target that is the subject of such Research Program (together with any other activity expressly set forth under this Agreement to be performed by or on behalf of Janssen during the Research Term, the "**Janssen**

Research Activities" and, together with the Morphic Research Activities, the "**Research Activities**").

2.2. **Research Plans and Research Budgets**.

2.2.1. **Research Plans**. For each Target that is the subject of a Research Program, Morphic will perform (or, in the case of the matters described in clauses (f) and (h) below, will use its Commercially Reasonable Efforts to perform) the Morphic Research Activities for such Research Program and Janssen will perform the Janssen Research Activities for such Research Program in accordance with a written research plan that sets forth: (a) the Morphic Research Activities to be performed by or on behalf of Morphic during the Research Term, (b) the Janssen Research Activities to be performed by or on behalf of Janssen during the Research Term, (c) the applicable Mechanism of Action for Compounds directed to such Target, (d) the Lead Optimization Activities and Late Lead Optimization Activities for Compounds that are the subject of the applicable Research Program, (e) the estimated timelines upon which Morphic will complete such activities, (f) the Deliverables and other Results required for the JRC to determine whether to commence Late Lead Optimization Activities for Compounds that are the subject of such Research Program, (g) the protocols and other plans for the IND-Enabling Studies to be performed by Janssen for one or more Compounds that are the subject of such Research Program and (h) all other Deliverables and Results to be provided by Morphic to Janssen for such Research Program (each such plan, a "**Research Plan**"). The initial Research Plan agreed to by the Parties for each of the Research Programs [***].

2.2.2. **Research Budgets**. For each Research Program, Morphic or its authorized Third Party designees will perform the Morphic Research Activities for such Research Program in accordance with a detailed written budget for such activities, which will include the number of FTEs to be dedicated by Morphic to performing the Morphic Research Activities under such Research Plan, as well as any direct out-of-pocket expenses expected to be incurred in connection with the performance of the Morphic Research Activities (each such budget for a Research Plan, as may be amended pursuant to Section 2.2.3 (Updates to Research Plans and Research Budgets), a "**Research Budget**"). All internal personnel and resources of Morphic under each Research Budget will be expressed in terms of FTEs and FTE Costs plus any direct Out-of-Pocket Costs to be incurred (*e.g.*, from the use of contract research organizations or for the acquisition of materials that are specifically acquired for use in the applicable Research Program, including special reagents) in connection with the performance of the Morphic Research Activities as outlined in the applicable Research Plan. Morphic's internal costs for Morphic personnel

included in each Research Budget will be calculated and expressed using the relevant FTE Rates.

2.2.3. **Updates to Research Plans and Research Budgets**. The Research Plan and Research Budget for the 2019 Calendar Year are attached hereto as **Schedule 2.2.3**. No later than October 1 of each Calendar Year, Morphic will provide the JRC with a non-binding estimate of its FTE Costs and Out-of-Pocket Costs anticipated to be incurred in the performance of the Morphic Research Activities for the subsequent two (2) Calendar Years, and the JRC will review and discuss such estimated costs at the next scheduled meeting of the JRC. The Parties may update each Research Plan and the corresponding Research Budget from time to time through the JRC, each of which updated plan and budget the JRC will have the right to determine whether to approve, subject to Section 4.6 (JRC Decision-Making). For clarity, if the JRC approves any update to a Research Plan to include additional Morphic Research Activities, then the JRC will also review, discuss and determine whether to approve an update to the applicable Research Budget to include the FTE Costs and Out-of-Pocket Costs anticipated to be incurred in connection with the performance of such additional Morphic Research Activities. Notwithstanding anything to the contrary set forth in this Agreement, Morphic will not have any obligation to perform any additional Morphic Research Activities under an update to a Research Plan unless and until the JRC approves an update to the corresponding Research Budget that contemplates the appropriate additional reimbursement for the performance of such activities.

2.3. **Research Program Costs**.

2.3.1. **Allocation of Costs**. For all Morphic Research Activities with respect to a Research Program during the Option Period for such Research Program, Janssen will be responsible for all FTE Costs and Out-of-Pocket Costs incurred by Morphic in the performance of the Morphic Research Activities to the extent within the applicable Research Budget, plus Allowable Overruns. If Morphic incurs FTE Costs and Out-of-Pocket Costs in excess of the sum of the applicable Research Budget plus Allowable Overruns, then Janssen will not be obligated to bear such excess costs unless the JRC approves such excess costs (either before or after such costs have been incurred).

2.3.2. **Reporting; Payment**. Morphic will provide Janssen with a report of the estimated amounts due under Section 2.3.1 (Allocation of Costs) in the current Calendar Quarter no later than [***] prior to the end of such Calendar Quarter. Within [***] after the end of each Calendar Quarter, unless such timing is adjusted by the Parties in writing, Morphic will provide Janssen with an invoice of actual FTE Costs and Out-of-Pocket

Costs incurred in connection with the performance of the Morphic Research Activities during the prior Calendar Quarter for which Janssen is obligated to reimburse Morphic pursuant to Section 2.3.1 (Allocation of Costs), each of which invoices will contain a detailed and itemized calculation (consistent with Janssen's then current internal reporting format previously provided to Morphic) of such costs incurred. Janssen will pay all amounts (other than those amounts that Janssen disputes in good faith in accordance with the terms and conditions of this Agreement) set forth in each such invoice in accordance with Section 8.11 (Invoicing and Payment).

2.4. **Commencement of Research Activities; Research Term**.

2.4.1. **Commencement of Research Activities**. On a Research Program-by-Research Program basis (but subject to the remainder of this Section 2.4 (Commencement of Research Activities; Research Term)), Janssen will have sole discretion and decision-making authority over whether to commence the Research Activities in accordance with the applicable Research Plan for each Research Program. Notwithstanding the foregoing, (a) the Parties will commence Research Activities for at least one Research Program in accordance with the applicable Research Plan for such Research Program promptly following the Effective Date and (b) the Parties will commence Research Activities for all Research Programs no later than [***] following the Effective Date. Upon Janssen's determination that the Parties will commence Research Activities for an additional Research Program under this Agreement, in each case, in accordance with the applicable Research Plan for such Research Program, then on a Research-Program-by-Research Program basis, Janssen will pay the Research Program Fee with respect to such additional Research Program in accordance with Section 8.2 (Research Program Fee**)**.

2.4.2. **Research Term**. On a Research Program-by-Research Program basis, the Research Activities for a Research Program will be performed by or on behalf of the Parties during the period commencing on the applicable date on which Janssen determines to commence the Research Activities for such Research Program in accordance with Section 2.4.1 (Commencement of Research Activities) and expiring on the earlier of the completion of such Research Activities and the date that is [***] thereafter (unless the Parties agree in writing to extend such date for such Research Program) (as such date may be extended, the "**Research Term Outside Date**" and such period, the "**Research Term**"); *provided* that the Research Term for a Research Program will terminate upon the exercise by Janssen of an Option with respect to such Research Program pursuant to Section 3.2 (Option Exercise).

2.5. **Late Lead Optimization Activities**. On a Research Program-by-Research Program basis, Morphic will use Commercially Reasonable Efforts to complete the Morphic Lead Optimization Activities for Compounds that are the subject of such Research Program as set forth in the applicable Research Plan in accordance with the timeframes for completing such activities set forth in such Research Plan. On a Research Program-by-Research Program basis, Morphic will provide written notice to Janssen once it has completed the Morphic Lead Optimization Activities for such Research Program, together with all Deliverables to be provided with respect to such activities (as set forth in the applicable Research Plan) and supporting Results. Following completion of all Lead Optimization Activities for such Research Program (including the Morphic Lead Optimization Activities), Janssen will have sole discretion and decision-making authority over whether and when to commence the Late Lead Optimization Activities for the applicable Compounds that are the subject of the applicable Research Program based on its review of all Deliverables and supporting Results from the Lead Optimization Activities for such Research Program and taking into account the Lead Candidate Guidelines for the Target that is the subject of such Research Program; *provided* that Janssen will make such determination and commence Late Lead Optimization Activities no later than sixty (60) days following completion of such Lead Optimization Activities for such Research Program. Upon Janssen's determination (to be made within such sixty (60) day period) that the Parties will commence the Late Lead Optimization Activities for such Research Program, Janssen will pay the Late Lead Optimization Fee with respect to such Research Program in accordance with Section 8.3 (Late Lead Optimization Fee). Janssen will only be obligated to pay the Late Lead Optimization Fee one time with respect to each Research Program, and after Janssen pays the Late Lead Optimization Fee for a Research Program, without limiting Morphic's obligations under this Agreement, Janssen will not be obligated to pay any additional Late Lead Optimization Fee for any additional Compounds that are the subject of such Research Program. If, within sixty (60) days following completion of Lead Optimization Activities for a given Research Program, Janssen does not (a) provide written notice to the JRC indicating that it will commence Late Lead Optimization Activities for such Research Program and (b) commence the applicable Late Lead Optimization Activities, then, unless otherwise agreed by the Parties in writing, (i) this Agreement will terminate with respect to such Research Program in accordance with Section 14.4 (Termination for Failure to Determine to Commence Late Lead Optimization Activities), (ii) such Research Program will thereafter be a Terminated Program and (iii) the terms and conditions of Section 3.6 (Termination of Option) shall apply with respect to such Terminated Program.

2.6. **Replacement Targets**.

2.6.1. **Replacement Decision**. On a Research Program-by-Research Program basis, at any time prior to commencement of those Research Activities designated in the applicable Research Plan for such Research Program to be commenced after completion of the first *in vivo* experiment set forth

in such Research Plan for a Compound that is the subject of such Research Program, subject to Section 2.6.3 (Occupied MoAs), Janssen may elect to (a) change the Mechanism of Action for the Target that is the subject of such Research Program or (b) replace the Target that is the subject of such Research Program with a new target and Mechanism of Action (such new Mechanism of Action pursuant to the foregoing clause (a) or new target and Mechanism of Action pursuant to the foregoing clause (b), each, a "**Replacement Target MoA**," and such decision, a "**Replacement Decision**"). If, as of the Replacement Decision, Morphic or its Affiliates have assigned FTEs to perform Development or Commercialization activities related to the potential Replacement Target MoA that is the subject of such Replacement Decision pursuant to a detailed written plan and allocated resources to the performance of such activities in accordance with an associated budget (and Morphic is at such time actively performing such Development or Commercialization activities with respect to such potential Replacement Target MoA), but at such time Morphic or its Affiliates have not identified a compound that modulates the applicable target via the applicable Mechanism of Action and shown that such candidate has activity in one or more *in vitro* functional cell-based assays against such a target via a Mechanism of Action, then Morphic shall provide written notice to Janssen describing:

(a) all of its out-of-pocket costs with respect to the acquisition and Development to-date of such potential Replacement Target MoA; and

(b) all existing agreements to which Morphic and its Affiliates have entered into with respect to such potential Replacement Target MoA that are in existence as of the effective date of such Replacement Decision.

Following receipt of such notice, the Parties will discuss in good faith any potential allocation of costs and any potential allocation of obligations under such existing agreements described in such notice with respect to such potential Replacement Target MoA, *provided*, *however*, that in no event will Janssen be responsible for any financial or other obligations of Morphic to any Third Party under or related to the CMCC License Agreement with respect to such potential Replacement Target MoA. If, following receipt of such notice, Janssen elects to proceed with the applicable Replacement Target MoA, then (i) to the extent agreed in writing by the Parties, such Replacement Target MoA will be subject to all existing agreements to which Morphic and its Affiliates have entered into with respect to such potential Replacement Target MoA that (A) are in existence as of the effective date of such Replacement Decision and (B) have been disclosed to Janssen, (ii) Janssen shall reimburse Morphic for the amount of such costs agreed in writing by the Parties and (iii) any

Research Program for which Janssen rendered a Replacement Decision shall become a Terminated Program and the program of Research Activities undertaken for the Replacement Target MoA shall be a Research Program. If pursuant to a Replacement Decision, Janssen replaces the Target that is, at such time, the subject of a Research Program with a different target that is not the subject of any Research Program under this Agreement, then such replaced Target shall be removed from this Agreement as a "Target" and the terms and conditions of this Agreement (including Section 2.13 (Exclusivity)) shall no longer apply with respect to such replaced Target. If, however, following receipt of such notice described above, the Parties cannot agree on the allocation of costs and obligations under such existing agreement described in such notice with respect to such potential Replacement Target MoA, then there will not be a Replacement Decision with respect to such potential Replacement Target MoA.

2.6.2. **Limit on Replacements**. Notwithstanding anything to the contrary set forth in this Agreement, Janssen may only complete two (2) Replacement Decisions under this Agreement.

2.6.3. **Occupied MoAs**. Notwithstanding anything to the contrary in Section 2.6.1 (Replacement Decisions), that if at the time of a Replacement Decision:

(a) Morphic is precluded from granting Janssen the licenses under this Agreement with respect to such proposed Replacement Target MoA due to a conflicting grant of rights (or an outstanding option to obtain such a grant of rights) or covenant to a Third Party pursuant to a *bona fide* written agreement that is executed in good faith in the ordinary course of business prior to the date of the Replacement Decision for such proposed target via the proposed Mechanism of Action that is still in effect on such date, or

(b) Morphic is conducting a Morphic Internal Program itself with respect to such proposed Replacement Target MoA (each of (a) and (b), a "**Pre-Existing Restriction**," and such proposed target, in each case ((a) and (b)), an "**Occupied MoA**"),

then, in each case ((a) and (b)), Morphic will promptly notify Janssen that such proposed Replacement Target MoA is an Occupied MoA, and Janssen may select another proposed Replacement Target MoA (and another if such other proposed Replacement Target MoA is an Occupied MoA and so on) until such time that Janssen selects a Replacement Target MoA that is not an Occupied MoA, at which point such proposed Replacement Target MoA will be added as a Target and Research Program under this Agreement. If Janssen in good faith questions why a proposed Replacement Target MoA

is an Occupied MoA, then, upon Janssen's request, Morphic will promptly provide reasonable evidence as to why such proposed Replacement Target MoA is an Occupied MoA. In the event of a dispute with regard to any proposed Replacement Target MoA, such dispute will be resolved in accordance with Section 15.1 (Discussion by Executive Officers; Arbitration).

2.6.4. **Effects of Notice**. Effective immediately upon a Replacement Decision by Janssen, subject to Section 2.6.3 (Occupied MoAs), the proposed target included in the Replacement Target MoA will become a Target for purposes of this Agreement and all applicable terms and conditions of this Agreement will apply to such target as a Target and the corresponding Research Program hereunder. Following the Parties' agreement on a Research Plan with respect to such Target via the applicable Mechanism of Action in accordance with Section 2.6.5 (Research Plans for Replacement Target MoAs), the Parties will promptly initiate Research Activities with respect to such Target via the applicable Mechanism of Action in accordance with Section 2.1 (Research Programs).

2.6.5. **Research Plans for Replacement Target MoAs**. No later than [***] after a Replacement Decision by Janssen, subject to Section 2.6.3 (Occupied MoAs), the Parties will develop, through the JRC, a Research Plan (including applicable Threshold Activity and Selectivity) for such Replacement Target MoA and an associated Research Budget for the costs and expenses associated with the performance of the Research Activities set forth under such Research Plan, in each case, in accordance with this Section 2.6.5 (Research Plans for Replacement Target MoAs). The content of the Research Plan for such Replacement Target MoA will be consistent in scale and scope to that set forth in the Research Plans for all other Targets under this Agreement, including Research Activities that are consistent in scale and scope with the corresponding activities under the Research Plans for such other Targets. The Research Budget for each Replacement Target MoA will be substantially similar to the Research Budgets for all other Targets under this Agreement.

2.7. **Expiration of Pre-Existing Restrictions**. If at any time during the period in which Janssen is eligible to make a Replacement Decision under Section 2.6.1 (Replacement Decision), any Pre-Existing Restriction that precluded Janssen from selecting a proposed Replacement Target MoA as a Target that Janssen previously proposed under Section 2.6.1 (Replacement Decision) later expires, terminates or is otherwise modified such that such proposed Replacement Target MoA would no longer be an Occupied MoA, then, so long as Janssen has not previously completed two (2) Replacement Decisions, Morphic will promptly notify Janssen of such expiration, termination or modification (as applicable).

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

2.8. **Janssen Compounds**. In order to facilitate a given Research Program, Janssen may provide Janssen Compounds to Morphic, the transfer of which compounds shall be documented in writing. Except as otherwise expressly set forth under this Agreement, (a) all Janssen Compounds will remain the sole property of Janssen, (b) Morphic will use the Janssen Compounds only in the performance of Morphic Research Activities conducted in accordance with the applicable Research Plan and Applicable Law and (c) Morphic will not use or deliver to or for the benefit of any Third Party any Janssen Compound without the prior written consent of Janssen. Morphic will use the Janssen Compounds supplied under this Agreement with prudence and appropriate caution as not all of their characteristics may be known. Janssen will provide Morphic the most current material safety data sheet for the Janssen Compounds upon their transfer to Morphic. Except as expressly set forth in this Agreement, THE JANSSEN COMPOUNDS ARE PROVIDED "AS IS" AND WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY WARRANTY THAT THE USE OF THE JANSSEN COMPOUNDS WILL NOT INFRINGE OR VIOLATE ANY PATENT OR OTHER PROPRIETARY RIGHTS OF ANY THIRD PARTY.

2.9. **Research Reports**.

2.9.1. **Research Activities**. During the Research Term for each Research Program, Morphic will keep Janssen reasonably informed, through the JRC, regarding the status and progress of Morphic's activities under such Research Program, including the status of all Morphic Research Activities. During the Research Term for a Research Program, on a Calendar Quarterly basis, Morphic will prepare and provide to the JRC written reports on the status of all such Morphic Research Activities performed under such Research Program during the applicable Calendar Quarter. Such quarterly reports will include, with respect to such Research Program, the characteristics of any Compounds identified, the selection of Compounds for further study (including those for which Janssen may determine to commence Late Lead Optimization Activities following the completion of Lead Optimization Activities for such Research Program in accordance with Section 2.5 (Late Lead Optimization Activities)), completed Morphic Research Activities required for Janssen to commence IND-Enabling Studies for such Research Program and the Prosecution and Maintenance of any Morphic Patents or Joint Patents Covering any such Compounds. Such reports must be sufficient in content to allow Janssen to evaluate the progress of the Morphic Research Activities against the objectives and timelines included therefor in the applicable Research Plan. In addition, Morphic will promptly report any other Results of a Research Program that are reasonably likely to be significant to the JRC. At any time during the Option Period for a Research Program, Morphic will promptly respond to any reasonable inquiries from Janssen regarding the progress of activities

under such Research Program (including any Morphic Research Activities).

2.9.2. **Research Costs**. In addition, in each report to be provided pursuant to Section 2.9.1 (Research Activities), Morphic will provide (a) a summary of the FTE efforts and Out-of-Pocket Costs (along with reasonable supporting documentation), in each case, incurred by or on behalf of Morphic during the applicable Calendar Quarter in the performance of the Morphic Research Activities under each Research Program during such Calendar Quarter and (b) a reasonable estimate of the FTEs and Out-of-Pocket Costs, in each case, to be incurred on a Calendar Quarter-by-Calendar Quarter basis by or on behalf of Morphic in order to complete the Morphic Research Activities as set forth under the applicable Research Plan.

2.9.3. **JRC Discussion**. The JRC will review the quarterly update reports for each such Research Program and (a) confer regarding the progress towards developing Compounds that are the subject of each Research Program for which the Parties are ready to conduct Late Lead Optimization Activities, (b) review relevant Deliverables provided and Results generated in the performance of such Morphic Research Activities, (c) consider and advise on any technical issues that may arise and (d) discuss the Janssen Research Activities performed by or on behalf of Janssen under such Research Program during the same period. Notwithstanding anything to the contrary set forth in this Agreement, on a Research Program-by-Research Program basis, Janssen will not be obligated to discuss the Janssen Research Activities for such Research Program with the JRC or Morphic in the event of a Change of Control of Morphic involving a Third Party that is, at such time, performing any Competing Activities for any Competitive Product with respect to such Research Program.

2.10. **Research Program Records**. Morphic will maintain, or cause to be maintained, records of its activities under each Research Program in accordance with the procedures and requirements set forth in **Schedule 2.10** (Data Integrity Requirements) and the Results generated by Morphic and delivered to Janssen hereunder will comply with such procedures and requirements.

2.11. **Performance of Morphic Research Activities**. Morphic will (a) provide all resources necessary for it to perform all Morphic Research Activities and (b) perform all Morphic Research Activities with reasonable care and skill in accordance with all Applicable Laws and the terms of this Agreement. On a Research Program-by-Research Program basis, as set forth under this Agreement, Morphic will use its Commercially Reasonable Efforts to complete all Morphic Research Activities set forth under each Research Plan in accordance with the performance timelines set forth in the applicable Research Plan and

provide to Janssen all Deliverables and Results set forth in the applicable Research Plan within the timeframes included therefor. During the Research Term, Morphic will devote the efforts of suitably qualified and trained employees and research assistants capable of carrying out the Morphic Research Activities set forth under each Research Plan to a professional, workmanlike standard and will provide all necessary materials and facilities therefor.

2.12. **Copies and Inspection of Records**. Once every [***], during normal business hours and upon reasonable notice not less than [***], Janssen will have the right to inspect all records of Morphic or its authorized Third Party designees that relate to the performance of Research Activities by or on behalf of Morphic. Notwithstanding anything to the contrary set forth in this Agreement, Janssen will have the right to inspect such records more than once every [***] for reasonable cause. Janssen will have the right to arrange for its employees or independent consultants and (sub)contractors involved in the performance of activities under this Agreement to (a) visit the offices and laboratories of Morphic and its Third Party contractors once every [***] during normal business hours and upon reasonable notice not less than [***] and (b) discuss with Morphic's technical personnel and consultants the performance and progress of the Research Activities and applicable Deliverables and associated Results in detail. After preparing or receiving the report for such visit or inspection, Janssen will provide Morphic with a written summary of Janssen's findings of any deficiencies or other areas of remediation that Janssen identifies during any such visit or inspection. Morphic will use its Commercially Reasonable Efforts to remediate any such deficiencies within [***] after Morphic's receipt of such report, at Morphic's cost and expense.

2.13. **Exclusivity**.

2.13.1. Other than in the performance of activities under this Agreement and subject to Section 2.6.1 (Replacement Decision) and Section 3.6 (Termination of Option), Morphic will not (and will cause its Affiliates and Sublicensees not to), either alone or directly or indirectly with any Third Party, Exploit any biological molecule, chemical molecule or other molecule that is designed and intended by Morphic to modulate, bind to or target (a) any Target and (b) solely with respect to any Replacement Target MoA, any Target with a Mechanism of Action that is the same as the Mechanism of Action for the Replacement Target MoA (on a Target-by-Target or Replacement Target MoA-by-Replacement Target MoA basis, as applicable, any such molecule described in the foregoing, each a "**Competitive Product**" and such activities, the "**Competing Activities**"). For clarity, if target A is a Target, and target B is a separate target, then Morphic would have the right to screen Compounds for use in connection with target B in a counter-screen containing target A in order to attempt to determine whether such Compounds have off-target activity against target A, but Morphic would not have the right to perform any other

activities with respect to target A outside of the performance of activities under this Agreement.

2.13.2. For any Compounds (a) synthesized by Morphic under this Agreement during the Research Term in the course of performing Morphic Research Activities and (b) produced in sufficient quantities to perform *in-vitro* cell-based assays of Compounds in accordance with the applicable Research Plan (the "**Synthesized Compounds**"), Morphic will not, either alone or directly or indirectly with any Third Party, perform any Clinical Trials (or activities associated therewith), Manufacture (other than for non-clinical research purposes) or Commercialize such Synthesized Compounds in patients with chronic kidney disease or acute kidney injury during the period commencing on Janssen's exercise of the first Option and ending on the [***] of the exercise of such Option.

2.14. **Acquisitions by Third Parties**.

2.14.1. [***]

2.14.2. [***]

3. OPTION.

3.1. **Option Grant**. On a Research Program-by-Research Program basis, Morphic hereby grants to Janssen the exclusive option, exercisable at Janssen's sole discretion, to obtain the licenses set forth in Section 7.2.1 (Exclusive License Grant) with respect to the Target that is the subject of each Research Program (including all Licensed Compounds that are the subject of the applicable Research Program) (each, an "**Option**").

3.2. **Option Exercise**. Janssen may exercise an Option for a Research Program by delivering written notice of such exercise to Morphic at any time during the Option Period for such Research Program (each such notice, an "**Option Exercise Notice**"). Upon Janssen's delivery to Morphic of an Option Exercise Notice for a Research Program, (a) Janssen will be granted the licenses set forth in Section 7.2.1 (Exclusive License Grant) with respect to the Target that is the subject of such Research Program (including with respect to all Licensed Compounds that are the subject of the applicable Research Program), (b) Morphic will promptly provide Janssen with any existing supplies of Licensed Compounds that are the subject of the Research Program with respect to which Janssen exercised an Option, (c) Morphic will provide to Janssen copies of all Morphic Know-How that is necessary or useful to Exploit the Licensed Compounds and Products that are the subject of such Research Program in accordance with Section 5.1.2 (After Option Exercise) and (d) Morphic will assign to Janssen all Assigned Product-Specific Patents with respect to such Research Program in accordance with Section 9.2.2 (Morphic Assignment of Assigned Product-Specific Technology).

3.3. **IND-Enabling Study Report**. On a Research Program-by-Research Program basis, within [***] following the date on which the complete IND-Enabling Study Reports from the IND-Enabling Studies for at least [***] animal species for such Research Program becomes available to Janssen, Janssen will deliver to the JRC such IND-Enabling Study Report for such Research Program (the date of such delivery, the "**IND-Enabling Study Completion Date**").

3.4. **Due Diligence**. Following the IND-Enabling Study Completion Date for a Research Program and during the applicable Option Period for such Research Program, to assist Janssen in conducting thorough due diligence to decide whether to exercise an Option for such Research Program, (a) Morphic will afford to Janssen and its representatives reasonable access during normal business hours to Morphic's personnel, records and data, offices and laboratories, in each case, that Janssen may reasonably request related to such Research Program and Licensed Compounds and (b) Morphic will promptly provide through an electronic data room downloadable and printable copies of (i) any documents reasonably requested by Janssen, (ii) any Patent or regulatory information and (iii) any Results relating to such Research Program, in each case ((i) — (iii)), then available to Morphic and to the extent that such information has not been previously provided by Morphic to Janssen and subject to customary and reasonable due diligence procedures to preserve the confidential nature of any such information.

3.5. **Extension of Option Period**. If any information is provided to Janssen following the IND-Enabling Study Completion Date for a Research Program pursuant to a request made by Janssen under Section 3.4 (Due Diligence) within [***] after such IND-Enabling Study Completion Date, and such information is, in Janssen's reasonable discretion, material information not previously provided to Janssen and required to be provided pursuant to Section 2.9 (Research Reports) for such Research Program, then the applicable Option Period for such Research Program will be automatically extended such that there are [***] between Janssen's receipt of such material information and the expiration of the Option Period for such Research Program.

3.6. **Termination of Option**. On an Option-by-Option basis and Research Program-by-Research Program basis, if (a) within sixty (60) days following completion of Lead Optimization Activities for a given Research Program, Janssen does not both provide written notice to the JRC indicating that it will commence Late Lead Optimization Activities for such Research Program and commence Late Lead Optimization Activities for such Research Program during such sixty (60) day period, (b) Janssen does not deliver to Morphic an Option Exercise Notice for a Research Program during the applicable Option Period for such Research Program or (c) Janssen elects, in its sole discretion, to deliver written notice to Morphic to terminate an Option with respect to a Research Program prior to the expiration of the applicable Option Period for such Research Program, then, in either case ((a), (b) or (c)), (i) Janssen's Option with respect to such Research Program will expire, (ii) the Research Term with respect to such Research Program

will terminate, (iii) except as otherwise expressly set forth in this Agreement, each Party's rights and obligations under this Agreement with respect to such Research Program will terminate (including the obligations set forth in Section 2.13 (Exclusivity) with respect to the applicable Target that is the subject of such Research Program), (iv) such Research Program will be a Terminated Program for purposes of this Agreement and (v) Morphic will thereafter be free to Exploit, alone or with one or more Third Parties, any Compounds or Products that are the subject of such Research Program, subject to the terms of Section 3.7 (Right of First Negotiation). Notwithstanding anything to the contrary set forth in this Agreement, the obligations of confidentiality and non-use set forth in ARTICLE 12 (Confidentiality) will apply to any Confidential Information of both Morphic and Janssen related to such Research Program.

3.7. **Right of First Negotiation**.

3.7.1. **ROFN Exercise Notice**. If Janssen does not exercise an Option with respect to a Research Program in accordance with Section 3.2 (Option Exercise) prior to the expiration of the Option Period for such Research Program, and after the expiration of such Option Period Morphic or any of its Affiliates has completed the final study report for a POC Clinical Trial for a Terminated Janssen Product that is the subject of such Terminated Program (a "**Passed Terminated Janssen Product**"), then (a) Morphic will notify Janssen in writing within [***] following the completion of such POC Clinical Trial and (b) within [***] following such notification to Janssen, Morphic will provide Janssen with the Terminated Product Package for such Passed Terminated Janssen Product, which will include all Results related to the applicable Passed Terminated Janssen Product through the completion of the POC Clinical Trial for such Passed Terminated Janssen Product (the information provided in the foregoing clauses (a) and (b), collectively, a "**ROFN Availability Notice**"). Subject to this Section 3.7 (Right of First Negotiation), Janssen will have an exclusive right of first negotiation to negotiate the terms of a definitive agreement pursuant to which Janssen would be granted exclusive rights to Develop, Manufacture and Commercialize such Passed Terminated Janssen Product (such exclusive right, a "**ROFN**"). Janssen may exercise the ROFN with respect to any applicable Passed Terminated Janssen Product that is the subject of a ROFN Availability Notice by notifying Morphic in writing (such notice, the "**ROFN Exercise Notice**") no later than [***] after receipt of all information to be provided in such ROFN Availability Notice. During such [***] period following Morphic's delivery of a ROFN Availability Notice, Morphic will (i) provide Janssen with other information and documentation in Morphic's or its Affiliate's Control relating to such Passed Terminated Janssen Product reasonably requested by Janssen within [***] after Janssen's request therefor and (ii) afford Janssen and its representatives reasonable access during normal business hours to Morphic's personnel to gather more information

regarding such Passed Terminated Janssen Product. Until the expiration of such ROFN with respect to a Passed Terminated Janssen Product in accordance with this Section 3.7.1 (ROFN Exercise Notice), Morphic will not enter into negotiations or an agreement with any Third Party relating to any license, grant or other transfer of rights with respect to such Passed Terminated Janssen Product (including to further Develop and Commercialize any such product).

3.7.2. **Effects of ROFN Exercise**. If Janssen so provides a ROFN Exercise Notice to Morphic for such Passed Terminated Janssen Product within [***] following Morphic's receipt of such ROFN Exercise Notice, then each of Janssen and Morphic will exclusively negotiate in good faith with one another for a period of [***] following Janssen's receipt of all information to be provided in the applicable ROFN Availability Notice for such Passed Terminated Janssen Product the potential terms of a definitive agreement pursuant to which Janssen would be granted exclusive rights to Develop, Manufacture and Commercialize the applicable Passed Terminated Janssen Product (a "**Janssen Terminated Product Agreement**"), it being understood and agreed that neither Party shall be obligated to enter into any definitive agreement. The Janssen Terminated Product Agreement, at Janssen's election, may include a grant of rights with respect to the entire Territory or only one or more substantial regions within the Territory or a grant of rights with respect to the entire Field or only one or more indications in the Field.

3.7.3. **Expiration of ROFN**. If, with respect to a Passed Terminated Janssen Product for which Morphic delivers a ROFN Availability Notice to Janssen, (a) Janssen does not provide a ROFN Exercise Notice to Morphic within [***] following Janssen's receipt of all information to be provided in the applicable ROFN Availability Notice for such Passed Terminated Janssen Product or (b) Janssen and Morphic do not agree on the terms of a Janssen Terminated Product Agreement for such Passed Terminated Janssen Product within [***] following Janssen's receipt of all information to be provided in the applicable ROFN Availability Notice for such Passed Terminated Janssen Product, then, in each case ((a) and (b)), following such [***] period or [***] period, as applicable, and subject to the terms of this Agreement, Morphic will be free to enter into negotiations or an agreement with any Third Party relating to any license, grant or other transfer of rights with respect to such Passed Terminated Janssen Product (including to further Develop and Commercialize any such product) without any further obligation to Janssen; *provided* that during the additional [***] period following the end of such [***] period or [***] period, as applicable, Morphic and its Affiliates will not enter into an agreement (or agree to terms of a non-binding term sheet for such an agreement) with any Third Party on terms that contain lower payments to Morphic in any of the following categories than those corresponding terms

last offered by Morphic in writing to Janssen during such [***] or [***] period: (i) [***], (ii) [***], (iii) [***] or (iv) [***], without first granting Janssen the right to enter into an agreement with Morphic for the applicable Passed Terminated Janssen Product on such less favorable terms to Morphic.

3.7.4. **Passed Terminated Janssen Product Partnering**. If, prior to the completion of the first POC Clinical Trial for a Passed Terminated Janssen Product, Morphic or its Affiliates receives or makes a *bona fide* offer in the form of a non-binding term sheet or definitive agreement from or to any Third Party with respect to the transfer, assignment, grant of a license or other disposition of rights to Develop or Commercialize such Passed Terminated Janssen Product, then (a) Morphic will notify Janssen in writing within [***] following Morphic's receipt of such offer and (b) within [***] following such notification to Janssen, Morphic will provide Janssen with the Terminated Product Package for such Passed Terminated Janssen Product, which will include all Results in Morphic's or its Affiliate's possession or Control related to the applicable Passed Terminated Janssen Product through such date (a "**Partnering Notice**"). Janssen will have a period of [***] after receipt of all information to be provided in such Partnering Notice to present to Morphic a non-binding term sheet that sets forth the terms of a definitive agreement pursuant to which Janssen would be granted exclusive rights to Develop, Manufacture and Commercialize such Passed Terminated Janssen Product. During such [***] period, (i) upon Janssen's request, Morphic will (A) provide Janssen with other information and documentation in Morphic's or its Affiliate's Control relating to such Passed Terminated Janssen Product reasonably requested by Janssen within [***] after Janssen's request therefor and (B) afford Janssen and its representatives reasonable access during normal business hours to Morphic's personnel to gather more information regarding such Passed Terminated Janssen Product and (ii) Morphic will not enter into a definitive agreement or further discussions with any Third Party relating to any license, grant or other transfer of rights with respect to such Passed Terminated Janssen Product (including to further Develop and Commercialize any such product). If the terms of the non-binding term sheet presented by Janssen with respect to the applicable Passed Terminated Janssen Product are more favorable, in the aggregate, to Morphic than the terms presented in the non-binding term sheet received from or provided by Morphic to the applicable Third Party (as applicable), taking into account any differences regarding the scope of the rights to be licensed in each respective term sheet (including the territory, field, and other material rights and obligations of the parties thereto and, in the event of any dispute, as resolved in accordance with Section 15.1 (Discussion by Executive Officers; Arbitration)), then Janssen will have the exclusive right for [***] after Janssen's receipt from Morphic of all information to be provided in

the applicable Partnering Notice (or such later date on which the Parties may finally agree on the terms of such a term sheet, if the Parties wish to further negotiate the terms of such term sheet following Janssen's delivery thereof to Morphic) to negotiate with Morphic the terms of a definitive agreement pursuant to which Janssen would be granted exclusive rights to Develop, Manufacture and Commercialize such Passed Terminated Janssen Product.

3.7.5. **Expiration of a Partnering Right**. If, with respect to a Passed Terminated Janssen Product for which Morphic delivers a Partnering Notice to Janssen, (a) Janssen does not provide a non-binding term sheet to Morphic for such Passed Terminated Janssen Product within [***] following Janssen's receipt of all information to be provided in the applicable Partnering Notice, (b) the terms of the non-binding term sheet presented by Janssen with respect to the applicable Passed Terminated Janssen Product are not more favorable, in the aggregate, to Morphic than the terms presented in the non-binding term sheet received from or provided by Morphic to the applicable Third Party (as applicable), taking into account any differences regarding the scope of the rights to be licensed in each respective term sheet (including the territory, field, and other material rights and obligations of the parties thereto) or (c) Janssen and Morphic do not agree on the terms of a definitive agreement pursuant to which Janssen would be granted exclusive rights to Develop, Manufacture and Commercialize the applicable Passed Terminated Janssen Product within [***] after Janssen's receipt from Morphic of all information to be provided in the applicable Partnering Notice (or such later date on which the Parties may finally agree on the terms of such a term sheet, if the Parties wish to further negotiate the terms of such term sheet following Janssen's delivery thereof to Morphic), then, in each case ((a), (b) and (c)), following the expiration of such [***] or [***] period, as applicable, and subject to the terms of this Agreement, Morphic will be free to enter a definitive agreement or further discussions with the applicable Third Party relating to any license, grant or other transfer of rights with respect to such Passed Terminated Janssen Product (including to further Develop and Commercialize any such product); *provided* that if Morphic and such Third Party do not enter into a definitive agreement with respect to the Development and Commercialization of such Passed Terminated Janssen Product, then the terms of Section 3.7.1 (ROFN Exercise Notice) and Section 3.7.4 (Passed Terminated Janssen Product Partnering) will thereafter apply to such Passed Terminated Janssen Product.

4. GOVERNANCE.

4.1. **Joint Research Committee**. The Parties will establish a Joint Research Committee (the "**JRC**") comprised of three (3) employee representatives of

Morphic and three (3) employee representatives of Janssen, each of whom will have the appropriate experience and expertise to perform its responsibilities on the JRC. As of the Effective Date, the JRC representatives will be [***] for Janssen and [***] for Morphic. Each Party may replace its representatives to the JRC at any time upon written notice to the other Party. If agreed by the JRC on a case-by-case basis, the JRC may invite other non-members to participate in the discussions and meetings of the JRC, *provided* that such participants will have no voting authority at the JRC and that any such non-employee participants are bound by written obligations of non-use and confidentiality no less stringent than those set forth in ARTICLE 12 (Confidentiality).

4.2. **Committee Chair**. The JRC will be chaired by a Janssen committee member (the "**JRC Chair**"). As of the Effective Date the JRC Chair will be [***] of Janssen. The responsibilities of the JRC Chair will include:

4.2.1. Providing written notification to each Party at least [***] in advance of each JRC meeting;

4.2.2. Collecting and organizing agenda items for each JRC meeting and preparing the meeting agenda for such meeting; and

4.2.3. Preparing the written minutes of each JRC meeting and circulating such minutes for review and approval by the Parties, and identifying any action items to be carried out by the Parties.

4.3. **JRC Meetings**. The JRC will hold its first meeting within [***] after the Effective Date. During the Research Term and thereafter until disbanded as provided in Section 4.9 (JRC Term), the JRC will meet on a Calendar Quarter basis by audio or video teleconference and, at a minimum, twice each Calendar Year in person (which in-person meeting will be held on an alternating basis between Waltham, MA and a site of Janssen or any of its Affiliates, such to be agreed by the Parties). Either Party may also call a special meeting of the JRC (by videoconference or teleconference) upon at least [***] prior written notice to the other Party if such Party reasonably believes that a significant matter must be addressed before the next regularly scheduled JRC meeting, and such Party will provide the JRC materials reasonably adequate to enable an informed discussion by its members no later than [***] before the special meeting. Meetings of the JRC are effective only if at least two of the representatives of each Party are present at the meeting or participating by teleconference. Each Party will be responsible for all its own costs and expenses of participating in the JRC meetings. The Parties will endeavor to schedule meetings of the JRC at least [***] in advance. The Parties will agree on the minutes of each meeting promptly, but in no event later than [***] following the date of such meeting.

4.4. **JRC Responsibilities**. During any of the Research Terms, the JRC will:

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

4.4.1. Review, discuss and provide advice as to the progress of research activities to identify and characterize Compounds;

4.4.2. Review, discuss and provide advice on the progress of Research Activities as against the applicable Research Plan and Research Budget for each Research Program;

4.4.3. Review and discuss Morphic's estimates of the FTE Costs and Out-of-Pocket Costs anticipated to be incurred in the performance of the Morphic Research Activities for the subsequent two (2) Calendar Years, in accordance with Section 2.2.3 (Updates to Research Plans and Research Budgets);

4.4.4. Review, discuss and determine whether to approve (a) any updates to any Research Plan or Research Budget, in accordance with Section 2.2.3 (Updates to Research Plans and Research Budgets) and (b) any excess costs incurred by Morphic in the performance of the Morphic Research Activities, in accordance with Section 2.3.1 (Allocation of Costs);

4.4.5. Review, discuss and develop a Research Plan for each Replacement Target MoA, in accordance with Section 2.6.5 (Research Plans for Replacement Target MoAs);

4.4.6. Review, discuss and coordinate the delivery of the reports by Morphic regarding the Research Activities, in accordance with Section 2.8 (Research Reports);

4.4.7. Review and discuss the IND-Enabling Study Report for each Research Program delivered to the JRC by Janssen, in accordance with Section 3.3 (IND-Enabling Study Report);

4.4.8. Form such other committees as the JRC may deem appropriate, including (a) individual committees to oversee Research Activities under a particular Research Program and (b) the JFC, in accordance with Section 4.5 (Joint Finance Committee);

4.4.9. Attempt to resolve any disputes between the Parties related to the performance of the Research Activities on an informal basis (subject to Section 4.6 (JRC Decision-Making), Section 4.7 (Resolution of JRC Disputes) and Section 4.8 (Limitations on Decision Making)); and

4.4.10. Perform such other functions as expressly set forth in this Agreement or allocated to the JRC by the written agreement of the Parties**.**

4.5. **Joint Finance Committee**. At the appropriate time (as determined by the JRC), the JRC will establish a joint finance committee (the "**Joint Finance Committee**" or "**JFC**"), which will report to the JRC. The JFC will (a) coordinate the budgeting,

accounting, reporting, reconciliation and other financial activities set forth in this Agreement (including adjusting the due date for invoices prepared in accordance with Section 2.3.2 (Reporting; Payment)) and (b) perform any other functions that are expressly delegated to the JFC by the JRC. The JFC will include individuals from each Party with reasonable expertise in the areas of accounting, cost allocation, budgeting and financial reporting. Without limiting the foregoing, the JFC will provide a forum for the Parties to discuss the Research Budget for each Research Program (but, for clarity, the JFC will not develop or determine whether to approve such budgets) and to track Morphic's progress against such budgets. The JFC will meet at such times and with such frequency as the JRC deems appropriate. Each Party will be responsible for all its own costs and expenses of participating in the JFC meetings.

4.6. **JRC Decision-Making**.

4.6.1. **General Process**. The JRC will only have the powers expressly assigned to it in this ARTICLE 4 (Governance) and elsewhere in this Agreement and will not have the authority to: (a) modify or amend the terms and conditions of this Agreement; or (b) waive either Party's compliance with the terms and conditions of this Agreement. Regardless of the number of Janssen JRC committee members or Morphic JRC committee members, each Party will have one (1) vote, and the JRC will make decisions by consensus. Except as otherwise expressly set forth in this Agreement, the phrase "determine," "designate," "confirm," "approve," or "determine whether to approve" by the JSC and similar phrases used in this Agreement will mean approval in accordance with this Section 4.6.1 (General Process), including the escalation and tie breaking provisions herein.

4.6.2. **Decisions of the JRC**. The JRC will use good faith efforts, in compliance with this Section 4.6.2 (Decisions of the JRC), to promptly resolve any disagreement of the JFC and any such matter for which the JRC has authority under this Agreement. If, after the use of good faith efforts, the JRC is unable to resolve any such matter that is within the scope of the JRC's authority or any other disagreement between the Parties that may be referred to the JRC, in each case, within a period of [***], then either Party may refer such matter for resolution in accordance with Section 4.7 (Resolution of JRC Disputes) to [***] of Morphic (or [***] who has the power and authority to resolve such matter) and [***] of Janssen Research & Development, LLC (or [***] who has the power and authority to resolve such matter) (collectively, the "**Executive Officers**").

4.7. **Resolution of JRC Disputes**. If a Party makes an election under Section 4.6.2 (Decisions of the JRC) to refer a matter on which the JRC cannot reach a consensus decision for resolution by the Executive Officers, then the JRC will submit in writing the respective positions of the Parties to their respective

Executive Officers. The Executive Officers will use good faith efforts to resolve any such matter so referred to them as soon as practicable, and any final decision that the Executive Officers agree to in writing will be conclusive and binding on the Parties. If the Executive Officers are unable to reach agreement on any such matter referred to them within [***] after such matter is so referred (or such longer period as the Executive Officers may agree upon), then Janssen will have the final decision-making authority with respect to such decision, including with respect to any update to a Research Plan or Research Budget, *provided* that Janssen may not exercise such final-decision making authority with respect to:

4.7.1. the initial Research Plan or associated Research Budget for each Target via the applicable Mechanism of Action (including any initial Research Plan and associated Research Budget for a Replacement Target MoA);

4.7.2. whether a proposed Replacement Target MoA is an Occupied MoA in accordance with Section 2.6.3 (Occupied MoAs);

4.7.3. any change in the scope of the Morphic Research Activities set forth in any Research Plan or any change in any Research Budget, in each case, in a manner that establishes or increases the anticipated FTE Costs or Out-of-Pocket Costs to be incurred by or on behalf of Morphic; or

4.7.4. the addition or substitution of a new target to any Research Plan (other than any Replacement Decision made pursuant to the terms and conditions of this Agreement).

4.8. **Limitations on Decision Making**. Notwithstanding anything to the contrary set forth in this Agreement, no decision of Janssen in the exercise of its final decision-making authority will (a) cause a Party to take or decline to take any action that would be reasonably likely to result in a violation of any Applicable Law, the requirements of any Regulatory Authority or any agreement between Morphic and any Third Party or that would be reasonably likely to result in the infringement, misappropriation or other violation of any Intellectual Property of any Third Party, (b) impose any obligation on either Party that would be in violation of such Party's written standard operating procedures, written business policies or written compliance policies or procedures, (c) conflict with the terms and conditions of this Agreement, (d) determine that Janssen has fulfilled any obligations under this Agreement or that Morphic or its Affiliates have breached any obligation under this Agreement, (e) make a decision that is expressly stated to require the agreement or consent of the Parties or (f) expand Janssen's or its Affiliates' rights or reduce its obligations under this Agreement.

4.9. **JRC Term**. The responsibilities of the JRC will terminate, on a Research Program-by-Research Program basis, upon the expiration of the Option Period for a Research Program. Upon the termination of the JRC with respect to the final Research Program, the JRC will have a final meeting thereafter to review the

Results and Deliverables of the all Research Activities and will thereafter have no further authority with respect to activities under this Agreement.

5. DEVELOPMENT, REGULATORY MATTERS AND COMMERCIALIZATION.

5.1. **Technology Transfer**.

5.1.1. **Research Activities**. Morphic will transfer to Janssen copies of any and all Morphic Know-How that is necessary or useful for the performance of all Janssen Research Activities (a) no later than [***] after the Effective Date and (b) no later than [***] after the selection of any Replacement Target MoA by Janssen in accordance with Section 2.6.1 (Replacement Decisions). Each Calendar Quarter during the remainder of the Research Term for a Research Program, Morphic will transfer to Janssen copies of any Morphic Know-How that is related to the Janssen Research Activities under such Research Program and that is made, conceived, discovered or otherwise generated since the previous transfer of such Know-How to continue to enable Janssen to perform such Janssen Research Activities. Notwithstanding anything to the contrary set forth in this Agreement, Morphic will not, and will cause its Affiliates not to, disclose to Janssen or any of its Affiliates any Know-How licensed to Morphic under the CMCC License Agreement.

5.1.2. **After Option Exercise**. On a Research Program-by-Research Program basis, following Janssen's exercise of an Option with respect to a Research Program pursuant to Section 3.2 (Option Exercise), Morphic will transfer to Janssen copies of all Morphic Know-How that is necessary or useful to Exploit the Licensed Compounds and Products that are the subject of such Research Program.

5.1.3. **Morphic Support**. In addition to transferring copies of Morphic Know-How in accordance with this Section 5.1 (Technology Transfer), Morphic will make its personnel reasonably available to Janssen so as to enable Janssen to practice under the Morphic Technology in connection with its performance of the Janssen Research Activities and the Exploitation of such Compounds and Products. Morphic may invoice Janssen for the FTE Costs and Out-of-Pocket Costs actually incurred by or on behalf of Morphic in connection with providing such assistance and cooperation, and Janssen will pay the undisputed amounts set forth in any such invoice in accordance with Section 8.11 (Invoicing and Payment).

5.2. **Development and Commercialization After Option Exercise**. On a Research Program-by-Research Program basis, following Janssen's exercise of an Option with respect to a Research Program pursuant to Section 3.2 (Option Exercise), Janssen will thereafter have sole control over and decision-making with respect to, at its cost and expense, the Exploitation of all Licensed Compounds and Products

that are the subject of the applicable Research Program (including all Development, performance of Medical Affairs, Manufacture and Commercialization thereof).

5.3. **Development Reports**. On a bi-annual basis Janssen will provide to Morphic a high-level summary of all material Development activities conducted by or on behalf of Janssen for Products that are the subject of each Research Program for which Janssen exercised an Option. Janssen's obligations under this Section 5.3 (Development Reports) will terminate on a Research Program-by-Research Program basis following achievement and payment of all Development Milestone Events for a Research Program.

5.4. **Regulatory Activities**. Without limiting the generality of Section 5.1 (Technology Transfer), on a Research Program-by-Research Program basis, following Janssen's exercise of an Option with respect to a Research Program pursuant to Section 3.2 (Option Exercise), Janssen will thereafter have sole control over and decision-making with respect to, at its cost and expense, the preparation and submission of all Regulatory Submissions throughout the Territory for all Products that are the subject of the applicable Research Program. Janssen may file all MAAs for such Products in its own name (or in the name of its designee) and will own and control all such MAAs. Morphic will cooperate fully and in a timely manner to assist Janssen in its efforts to prepare and submit any Regulatory Submissions to obtain, support or maintain Regulatory Approvals for all such Products, including by providing to Janssen all data, written reports and other documentation related to any such Product Controlled by Morphic or its Affiliates (which assistance and data generation must be in accordance with Applicable Law and requirements and standards by applicable Regulatory Authorities) as well as any necessary samples and materials. Notwithstanding any provision of this Agreement to the contrary, if a Janssen-Operated Monitoring Board halts a Phase I Clinical Trial for a Product for patient health and safety reasons, then Janssen will provide Morphic reasonable detail of the findings of such Janssen-Operated Monitoring Board with respect to such determination.

5.5. **Development Diligence Obligations**. On a Research Program-by-Research Program basis, following Janssen's exercise of an Option with respect to a Research Program pursuant to Section 3.2 (Option Exercise), Janssen will use Commercially Reasonable Efforts to [***]. Janssen will have no other diligence obligations under this Agreement with respect to the Development or Regulatory Approval of any Compounds or Products.

5.6. **Commercialization Diligence Obligations**. Following receipt by or on behalf of Janssen of Regulatory Approval for a Product in the United States or a Major European Country, Janssen will use CRE to [***]. Janssen will have no other diligence obligations under this Agreement with respect to the Commercialization of any Products.

6. MANUFACTURING.

6.1. **General Responsibilities**. On a Research Program-by-Research Program basis, following (a) Janssen's exercise of an Option with respect to a Research Program pursuant to Section 3.2 (Option Exercise) and (b) successful manufacturing technology transfer as set forth in Section 6.3 (Manufacturing Technology Transfer) for each Licensed Compound and Product that is the subject of such Research Program, Janssen will have sole responsibility for, and sole decision-making authority with respect to, all Manufacturing activities and associated costs and expenses for the Manufacture of such Licensed Compounds and Products.

6.2. **Observation by Janssen**. On a Research Program-by-Research Program basis and to the extent Morphic performs Manufacturing activities with respect to Licensed Compounds and Products that are the subject of a Research Program with respect to which Janssen exercises an Option, following Janssen's exercise of an Option with respect to such Research Program pursuant to Section 3.2 (Option Exercise), Morphic will provide Janssen with the opportunity, upon Janssen's reasonable request during normal business hours, to observe the Manufacturing processes and procedures for each Licensed Compound that is the subject of a Research Program (*e.g.*, review assays, batch records and release processes and procedures) for the purpose of enabling Janssen (or a Third Party contract manufacturer designated by Janssen) to Manufacture such Licensed Compound and Products that incorporate such Licensed Compound pursuant to Section 6.3 (Manufacturing Technology Transfer). If Morphic utilizes a contract manufacturer for the Manufacture of any such Licensed Compound, then Morphic will take all reasonable actions, including entering into a three party agreement with Janssen and such contract manufacturer, to enable Janssen to exercise its rights under Section 6.1 (General Responsibilities) and this Section 6.2 (Observation by Janssen).

6.3. **Manufacturing Technology Transfer**. In addition to the initial technology transfer set forth in Section 5.1.1 (Research Activities), on a Research Program-by-Research Program basis and to the extent Morphic performs Manufacturing activities with respect to Licensed Compounds and Products that are the subject of a Research Program with respect to which Janssen exercises an Option, following Janssen's exercise of an Option with respect to such Research Program pursuant to Section 3.2 (Option Exercise) and Janssen's request with respect to Licensed Compounds that are the subject of such Research Program, the Parties will develop and agree upon a manufacturing technology transfer plan for such Licensed Compounds that will include all activities necessary to enable Janssen (or a contract manufacturer designated by Janssen) to Manufacture the applicable Licensed Compounds and all Products that incorporate such Licensed Compounds. The Parties understand and agree that following the technology transfer contemplated by this Section 6.3 (Manufacturing Technology Transfer) it may be necessary for Janssen from time to time to seek assistance and cooperation from Morphic in connection with the Manufacture of Licensed

Compounds and Products, including with respect to scale-up activities. Morphic will provide such assistance and cooperation as a consultant upon the reasonable request of Janssen.

7. LICENSE GRANTS.

7.1. **Research Term Licenses**.

7.1.1. **Grant to Morphic**. On a Research Program-by-Research Program basis, during the Research Term for a Research Program, Janssen hereby grants to Morphic a royalty-free, non-exclusive, worldwide license, with the right to sublicense through multiple tiers (subject to the provisions of Section 7.1.3 (Right to Sublicense)), under the Janssen Technology solely to perform the Morphic Research Activities as set forth under and in accordance with the Research Plan for such Research Program.

7.1.2. **Grant to Janssen**.

(a) **Janssen Research Activities**. On a Research Program-by-Research Program basis, during the Research Term for a Research Program, Morphic hereby grants to Janssen a royalty-free, non-exclusive, worldwide license, with the right to sublicense through multiple tiers (subject to the provisions of Section 7.1.3 (Right to Sublicense)), under the Morphic Technology solely to perform the Janssen Research Activities as set forth under and in accordance with the Research Plan for such Research Program.

(b) **Late Lead Optimization Activities**. On a Research Program-by-Research Program basis, during the Research Term for a Research Program, subject to the remainder of this Section 7.1.2(b) (Late Lead Optimization Activities), Morphic hereby grants to Janssen a royalty-free, non-exclusive, worldwide license, with the right to sublicense through multiple tiers (subject to the provisions of Section 7.1.3 (Right to Sublicense)), under the Morphic Technology solely to perform any Late Lead Optimization Activities that are Morphic Research Activities (as set forth under and in accordance with the Research Plan for such Research Program). Notwithstanding any provision in this Agreement to the contrary, Janssen may only perform those Late Lead Optimization Activities that are designated as Morphic Research Activities in the applicable Research Plan if (i) Morphic has not performed one or more of such Late Lead Optimization Activities as set forth in the applicable Research Plan and Janssen has provided written notice to Morphic that it has not performed one or more of such Late Lead Optimization Activities or otherwise failed to satisfy its obligations, in each case, as set forth under the applicable Research Plan and (ii) within [***] after

Janssen's delivery of such notice, Morphic has not cured such failure to perform or otherwise satisfied the obligations described in such written notice. If Janssen or its Affiliates so performs any such Late Lead Optimization Activities designated as Morphic Research Activities, then all such activities will be deemed to have been performed under the Agreement for such Research Program.

7.1.3. **Right to Sublicense**. Each Party and its respective Affiliates may grant sublicenses of the rights granted to such Party under Section 7.1.1 (Grant to Morphic) or Section 7.1.2 (Grant to Janssen), as applicable, to any Affiliate or Third Party. Any such sublicense will be consistent with the terms of this Agreement and will include confidentiality, non-disclosure and non-use provisions at least as restrictive or protective of the Parties as those set forth in this Agreement. Each Party will remain responsible and liable for the performance of all Sublicensees through all tiers under their sublicensed rights to the same extent as if such activities were conducted by the sublicensing Party and will ensure that any such Sublicensees comply with all relevant provisions of this Agreement. Any sublicense granted hereunder that is inconsistent with this Section 7.1.3 (Right to Sublicense) will be null and void.

7.2. **Development and Commercialization Licenses**.

7.2.1. **Exclusive License Grant**. On a Research Program-by-Research Program basis, subject to Janssen's exercise of an Option with respect to a Research Program in accordance with Section 3.2 (Option Exercise), Morphic hereby grants and agrees to grant to Janssen a worldwide, exclusive, royalty-bearing license, with the right to grant sublicenses in accordance with Section 7.2.4 (Right to Sublicense), under the Morphic Technology to Develop, make, have made, use, have used, sell, have sold, offer for sale, import and otherwise Exploit Licensed Compounds and Products that are the subject of such Research Program.

7.2.2. **Non-Exclusive License Grant to Morphic**. Janssen hereby grants and agrees to grant to Morphic a non-exclusive, royalty-free, irrevocable, perpetual, worldwide license, with the right to sublicense through multiple tiers, under all the Assigned Product-Specific Patents and all Assigned Product-Specific Know-How to Develop, make, have made, use, have used, sell, have sold, offer for sale, import and otherwise Exploit Morphic Compounds and Products incorporating or derived from Morphic Compounds, in each case, that are the subject of any Terminated Program.

7.2.3. **Residual Memory and Firewall**.

(a) Notwithstanding anything to the contrary in this Agreement but subject to Section 7.2.3(b), each Party's employees, contractors, advisors, agents and other personnel may use any learning, skills, ideas, concepts, techniques, Know-How and information Controlled by the other Party retained in intangible form in the unaided memory of such personnel who had access thereto through participation in the Research Activities (collectively, "**Residual Information**") for any purpose. A personnel's memory will be considered unaided only if such person has not intentionally memorized the information for the purpose of retaining and/or subsequently recording, publishing, disclosing or using it.

(b) Notwithstanding anything to the contrary in this Agreement, on a Research Program-by-Research Program basis, if Morphic provides any Morphic Know-How to Janssen in order for Janssen to conduct Late Lead Optimization Activities that are designated as Morphic Research Activities in the applicable Research Plan for a Research Program in accordance with Section 7.1.2(b) (Late Lead Optimization Activities), then, for a period commencing on the Effective Date and ending on the [***] of the end of the Research Term for such Research Program, Janssen covenants and agrees that (i) no such Morphic Know-How will be used by or on behalf of Janssen or any of its Affiliates in more than a *de minimis* fashion in connection with any subsequent performance of any Development or Commercialization of any pharmaceutical product (other than a Product) and (ii) Janssen and its Affiliates will institute commercially reasonable technical and administrative safeguards to ensure the requirements set forth in the foregoing clause (i) are met, including by creating "firewalls" between the personnel working on any such pharmaceutical product (other than a Product) and the personnel that (A) are conducting such Late Lead Optimization Activities for such Research Program or (B) have accessed data relating to such Late Lead Optimization Activities (*provided*, that the foregoing clause (A) and (B) will not apply to any senior management of Janssen (or its Affiliates) who merely have knowledge of the relationship with Morphic or who are receiving general information regarding the progress of such Late Lead Optimization Activities but do not direct or are not otherwise directly involved in the performance of such Late Lead Optimization Activities).

7.2.4. **Right to Sublicense**. Janssen will have the right to grant sublicenses (or further rights of reference), through multiple tiers of sublicensees, under the licenses granted to Janssen in Section 7.2.1 (Exclusive License Grant) to Janssen's Affiliates and other Third Parties; *provided* that any such sublicenses will be consistent with the terms and conditions of this Agreement and will include confidentiality, non-disclosure and non-use

provisions at least as restrictive or protective of the Parties as those set forth in this Agreement. Janssen will remain responsible and liable for the performance of all sublicensees through all tiers under their sublicensed rights to the same extent as if such activities were conducted by Janssen and will ensure that any such sublicensees comply with all relevant provisions of this Agreement. Any sublicense granted hereunder that is inconsistent with this Section 7.2.4 (Right to Sublicense) will be null and void.

7.2.5. **Sublicense Continuation upon Termination**. Upon termination of this Agreement for any reason, upon the request of any Sublicensee, Morphic will enter into a direct license from Morphic to such Sublicensee on the same terms as this Agreement, taking into account any difference in license scope, territory, and duration of sublicense grant (each a "**New License Agreement**"), *provided* that such Sublicensee is not at the time of such termination in breach of its sublicense agreement. Under any such New License Agreement between Morphic and such former Sublicensee, such Sublicensee will be required to pay to Morphic the same amounts in consideration for such direct grant as Morphic would have received from Janssen pursuant to this Agreement on account of such Sublicensee's Exploitation of Licensed Compounds or Products had this Agreement not been terminated. Under such New License Agreement, Morphic will not be bound by any grant of rights broader than, and will not be required to perform any obligation other than those rights and obligations contained in this Agreement and all applicable rights of Morphic set forth in this Agreement shall be included in such New License Agreement. Notwithstanding the foregoing, Morphic will not be obligated to enter into a New License Agreement with a Sublicensee unless such Sublicensee notifies Morphic within [***] after the termination of this Agreement that it wishes to enter into a New License Agreement. At the request of Janssen, Morphic will issue a comfort letter directly to any potential Sublicensee confirming the terms of this Section 7.2.5 (Sublicense Continuation upon Termination).

7.3. **No Other Licenses or Rights**. No license or other right is or will be created or granted under this Agreement by implication, estoppel or otherwise. All licenses and rights are or will be granted only as expressly provided in this Agreement. Notwithstanding anything to the contrary contained herein, no license or other right is or will be created or granted under this Agreement with respect to any Know-How or Patent licensed to Morphic under the CMCC License Agreement.

8. PAYMENTS.

8.1. **Upfront Payment; Research Program Fee**. On or after the Effective Date, Morphic will submit an invoice to Janssen for $10,000,000 USD as a one-time, non-refundable, non-creditable upfront payment in consideration of the Parties'

commencement of Research Activities for the first and second Research Program under this Agreement (the "**Upfront Payment**"). Janssen will pay to Morphic the Upfront Payment within [***] after receipt of invoice therefor by Janssen.

8.2. **Research Program Fee**. Janssen will pay to Morphic a one-time, non-refundable, non-creditable payment of $5,000,000 USD in consideration of the Parties' commencement of Research Activities for the third Research Program under this Agreement, in each case, in accordance with the applicable Research Plan for such Research Program (such commencement to occur upon Janssen's determination pursuant to Section 2.4 (Commencement of Research Activities; Research Term)) (the "**Research Program Fee**"). Janssen will pay the Research Program Fee once under this Agreement no later than [***] after Janssen's receipt of an invoice therefor in accordance with Section 8.11 (Invoicing and Payment), which invoice Morphic may not provide to Janssen unless and until Janssen determines to commence Research Activities for such third Research Program. If the Parties commence Research Activities in accordance with the applicable Research Plan for the third Research Program under this Agreement, then the maximum amount payable by Janssen under this Section 8.2 (Research Program Fee) is $5,000,000 USD. Janssen will not owe to Morphic the [***].

8.3. **Late Lead Optimization Fee**. On a Research Program-by-Research Program basis, Janssen will pay to Morphic a one-time, non-refundable, non-creditable payment of [***] in consideration of the Parties' commencement of Late Lead Optimization Activities for Compounds that are the subject of such Research Program (such commencement to occur upon Janssen's determination pursuant to Section 2.5 (Late Lead Optimization Activities)) (each, a "**Late Lead Optimization Fee**"). Janssen will pay the Late Lead Optimization Fee to Morphic once for each applicable Research Program no later than [***] after Janssen's receipt of an invoice therefor in accordance with Section 8.11 (Invoicing and Payment), which invoice Morphic may not provide to Janssen with respect to a Research Program unless and until Janssen determines to commence any Late Lead Optimization Activities for such Research Program.

8.4. **Option Exercise Fee**. On a Research Program-by-Research Program basis, Janssen will pay to Morphic a one-time, non-refundable, non-creditable payment of [***] USD (each, an "**Option Exercise Fee**") within [***] in accordance with Section 8.11 (Invoicing and Payment) after Janssen's receipt of an invoice from Morphic for the Option Exercise Fee for a Research Program, which invoice Morphic may not deliver until receipt by Morphic of an Option Exercise Notice for such Research Program.

8.5. **Development Milestones**. On a Research Program-by-Research Program basis, Janssen will make one-time, non-refundable, non-creditable milestone payments (each, a "**Development Milestone Payment**") to Morphic upon the first achievement by Janssen or its Affiliates or Sublicensees of each of the development milestone events (each, a "**Development Milestone Event**") set

forth in TABLE 8.5 (Development Milestones) below for the first Product that is the subject of each Research Program to achieve the applicable Development Milestone Event. For the avoidance of doubt, each Development Milestone Payment hereunder will be payable only once per Research Program upon the first achievement of the applicable Development Milestone Event by a Product that is the subject of such Research Program. No additional Development Milestone Payments will be made for any subsequent achievement of such Development Milestone Event by any other Product that is the subject of the same Research Program. If one or more Development Milestone Events are skipped for Products that are the subject of a particular Research Program, then such skipped Development Milestone Events will be payable upon the first achievement of the subsequent Development Milestone Event by a Product that is the subject of the same Research Program, except that a Development Milestone Event that is specific to one territory will not be deemed to be skipped solely because a subsequent Development Milestone Event was achieved in a different territory (*e.g.*, receipt of Regulatory Approval of a Product in a Major European Country will not be deemed to trigger a Development Milestone Payment for receipt of Regulatory Approval of such Product in the United States if such Regulatory Approval of such Product has not yet occurred in the United States). Janssen will notify Morphic in writing of the achievement of a Development Milestone Event by Janssen or its Affiliates or Sublicensees no later than [***] after Janssen becomes aware of the achievement thereof. Thereafter, Morphic will provide Janssen with an invoice for the corresponding Development Milestone Payment, and Janssen will pay to Morphic such Development Milestone Payment within [***] after its receipt of an invoice for such Development Milestone Payment in accordance with Section 8.11 (Invoicing and Payment). If Janssen or its Affiliates or Sublicensees achieve all Development Milestone Events with respect to Products that are the subject of a particular Research Program (regardless of the number of times such events occur or the number of Products that trigger such event), then the maximum amount payable by Janssen with respect to a particular Research Program under this Section 8.5 (Development Milestones) is [***] .

Table 8.5 — Development Milestones

Development Milestone Event	Development Milestone Payment ($USD)
[***]	[***]
[***]	[***]
[***]	[***]

[***]	[***]
[***]	[***]

8.6. **Sales Milestones**. On a Research Program-by-Research Program basis, Janssen will make one-time, non-refundable, non-creditable sales milestone payments (each, a "**Sales Milestone Payment**" and together with the Development Milestone Payments, the "**Milestone Payments**") to Morphic upon the achievement by Janssen or its Affiliates or Royalty Sublicensees of each of the sales-based milestones events (each, a "**Sales Milestone Event**") set forth in TABLE 8.6 (Sales Milestones) below with respect to aggregate annual worldwide Net Sales of Products that are the subject of each Research Program. Each of the Sales Milestone Payments set forth below will be payable only one time, for the first Calendar Year in which the corresponding Sales Milestone Event is achieved. Janssen will notify Morphic in writing of the achievement of a Sales Milestone Event by Janssen or its Affiliates or Royalty Sublicensees no later than [***] after the end of the Calendar Year in which such Sales Milestone Payment is payable pursuant to the preceding sentence. Thereafter, Morphic will provide Janssen with an invoice for the corresponding Sales Milestone Payment, and Janssen will pay to Morphic such Sales Milestone Payment within [***] after its receipt of an invoice for such Sales Milestone Payment in accordance with Section 8.11 (Invoicing and Payment). If Janssen or its Affiliates or Royalty Sublicensees achieve all Sales Milestone Events with respect to Products that are the subject of a particular Research Program (regardless of the number of times such events occur or the number of Products that trigger such event), then the maximum amount payable by Janssen with respect to a particular Research Program under this Section 8.6 (Sales Milestones) is [***].

Table 8.6 — Sales Milestones

Sales Milestone Event	Sales Milestone Payment ($USD)
[***]	[***]
[***]	[***]
[***]	[***]

8.7. **Royalties**. Subject to the provisions of Section 8.8 (Royalty Adjustments), on a Product-by-Product and country-by-country basis, Janssen will pay to Morphic

royalties in the amount of the marginal royalty rates set forth in TABLE 8.7 (Royalty Payments) below of the aggregate Net Sales resulting from the sale of each Product in the Territory during each Calendar Year of the applicable Royalty Term for each Product in each country (each, the "**Per Product Annual Net Sales**"). Only one royalty will be due with respect to the same Unit of Product.

Table 8.7 — Royalty Payments

Per Product Annual Net Sales	Royalty Rate (%)
[***]	[***]
[***]	[***]
[***]	[***]

8.8. **Royalty Adjustments**.

8.8.1. **Reduction for Lack of Valid Claims**. Subject to Section 8.8.4 (Maximum Payment Adjustments), on a Product-by-Product and country-by-country basis, if, during the Royalty Term for a Product in a country in the Territory, such Product sold in such country is not Covered by one or more Valid Claims within a Royalty-Bearing Patent in such country, then the royalties payable by Janssen pursuant to Section 8.7 (Royalties) for such Product in such country (without giving effect to any reduction pursuant to this Agreement) will be reduced by [***] for the remainder of the Royalty Term for such Product in such country.

8.8.2. **Generic Competition**. If, on a Product-by-Product, Calendar Quarter-by-Calendar Quarter and country-by-country basis, there is a (a) sale of one or more Generic Products with respect to a Product in a country and (b) [***] decrease in gross amounts invoiced by Janssen or any of its Affiliates or Royalty Sublicensees (excluding any Third Party Distributor or Compulsory Sublicensee) on sales of a Product to a Third Party purchaser (including any Third Party Distributor), in each case of (a) and (b), in any given Calendar Quarter as compared to the average of such gross amounts invoiced on sales of such Product for the immediately preceding four Calendar Quarters, then the royalty rates payable by Janssen pursuant to Section 8.7 (Royalties) for such Product in such country (without giving effect to any reduction pursuant to this Agreement) shall be reduced by [***] for the remainder of the Royalty Term for such Product in such country.

8.8.3. **Third Party Payments by Janssen**. Subject to Section 8.8.4 (Maximum Payment Adjustments), if Janssen or any of its Affiliates makes any payment to a Third Party in consideration for a grant of rights under a Patent or other Intellectual Property Controlled by such Third Party (whether by acquisition or license) that is necessary or useful to Exploit

one or more Products, then Janssen may credit against the royalties due to Morphic:

(a) in the case of any Morphic Research Activity Third Party Payments (except as provided in Section 8.9.3 (Third Party Agreements Prior to the Effective Date)), [***] of such amounts actually paid to such Third Party pursuant to such agreement; and

(b) in the case of all payments to one or more Third Parties other than Morphic Research Activity Third Party Payments, [***] of the amounts actually paid to such Third Party pursuant to such agreement (including any upfront payments, milestone payments, royalties and profit-sharing payments) in consideration for such rights.

8.8.4. **Maximum Payment Adjustments**. In no event will the royalties payable to Morphic by Janssen pursuant to Section 8.7 (Royalties) for a Product (without giving effect to any reduction pursuant to this Agreement) in a given Calendar Quarter be reduced by more than [***] of the aggregate amount that would otherwise be payable to Morphic in respect such royalties for such Product in such Calendar Quarter as a result of the reductions permitted pursuant to Section 8.8.1 (Reduction for Lack of Valid Claims), Section 8.8.2 (Generic Competition) and Section 8.8.3 (Third Party Payments by Janssen). Janssen may carry forward any such reductions permitted under Section 8.8.1 (Reduction for Lack of Valid Claims), Section 8.8.2 (Generic Competition) or Section 8.8.3 (Third Party Payments by Janssen) that are incurred or accrued in a Calendar Quarter but are not applied against royalties due to Morphic in such Calendar Quarter as a result of the foregoing floor and apply such amounts against royalties due to Morphic in any subsequent Calendar Quarter until the amount of such reduction has been fully applied against royalties due to Morphic.

8.8.5. **Royalty Sublicensees**. [***].

8.9. **Third Party Intellectual Property**.

8.9.1. **Morphic's Obligations**.

(a) **Morphic Research Activities**. Each Party will promptly notify the other Party if it becomes aware of any Intellectual Property Controlled by a Third Party that such Party reasonably determines is necessary or useful to conduct the Morphic Research Activities under the applicable Research Plan. Except as expressly set forth in a Research Plan, Morphic will have the first right, but not the obligation, to negotiate with and seek to acquire rights (whether by acquisition or license) to any issued patents Controlled by a Third

Party that a Party reasonably determines is necessary to conduct any Morphic Research Activities (such patent, an "**Identified Research Activity Patent**") or initiate a legal action contesting any assertion that the conduct of the Morphic Research Activities infringes, misappropriates or otherwise violates such Identified Research Activity Patents in accordance with Section 11.7 (Third Party Claims), and if Morphic so elects to seek such rights, then (i) Morphic will use reasonable efforts to ensure that any such rights are freely sublicensable to Janssen to the extent of the licenses and rights granted to Janssen under this Agreement and (ii) Janssen will have the right to review and comment on the terms of any such acquisition or license, and Morphic will consider in good faith any comments made by Janssen.

(b) **Identified Research Activity Patents**. If, however, Janssen notifies Morphic of an Identified Research Activity Patent during the Option Period for a Research Program and Morphic fails to (i) acquire such rights to such Identified Research Activity Patents or (ii) initiate a legal action contesting the assertion that the conduct of the Morphic Research Activities infringes, misappropriates or otherwise violates such Identified Research Activity Patents in accordance with Section 11.7 (Third Party Claims), in each case ((i) and (ii)), by the [***] of becoming aware thereof, then Morphic will so notify Janssen, and if following discussion with Morphic with respect to the acquisition of such rights Janssen reasonably believes that it is necessary to acquire rights to such Identified Research Activity Patents, then Janssen may seek to acquire such rights following the exhaustion of all appeals with respect to any such legal action. If Janssen elects to and so acquires such rights to such Identified Research Activity Patents in accordance with this Section 8.9.1(b) (Identified Research Activity Patents), then Janssen may credit the amounts paid to one or more Third Parties with respect to such rights in accordance with Section 8.8.3(a). Without limiting this Section 8.9.1(a) (Morphic Research Activities) or Section 13.3.1(c), Morphic will be responsible for all financial and other obligations owed by Janssen to Third Parties with respect to any infringement, misappropriation or other violation incurred in connection with or otherwise related to the performance of the Morphic Research Activities under the applicable Research Plan in accordance with Section 8.9.2 (Morphic Research Activity Third Party Payments).

(c) **CMCC License Agreement**. Except as expressly set forth in a Research Plan, Morphic will be solely responsible for, and will satisfy, all financial and other obligations, including royalties, due from Morphic to any Third Parties pursuant to the CMCC License Agreement.

8.9.2. **Morphic Research Activity Third Party Payments**. Except as expressly set forth in a Research Plan and subject in all cases to Janssen's right to credit payments due to Third Parties against royalties due to Morphic in accordance with Section 8.8.3(a) and Section 8.8.4 (Maximum Payment Adjustments), Morphic will be solely responsible for all, and will satisfy, financial (including any upfront payments, milestone payments, royalties and profit-sharing payments) and other obligations owed by Janssen to Third Parties with respect to any infringement, misappropriation or other violation incurred in connection with or otherwise related to the performance of the Morphic Research Activities under the applicable Research Plan to the extent performed by or on behalf of Morphic or Janssen (the "**Morphic Research Activity Third Party Payments**").

8.9.3. **Third Party Agreements Prior to the Effective Date**. Morphic will be solely responsible for all, and will satisfy, all financial and other obligations, including royalties, due from Morphic to any Third Parties pursuant to any agreement to which Morphic is a party as of the Effective Date and pursuant to which Morphic Controls any aspect of the Morphic Technology or the Morphic Platform or any Compound, including the CMCC License Agreement.

8.10. **Compulsory Licenses**. If a Governmental Authority grants or compels Janssen to grant a compulsory license to a Third Party to Commercialize a Product (a "**Compulsory Sublicensee**"), then, (a) if Janssen is compensated on a royalty basis, in lieu of the royalties that would otherwise be due to Morphic pursuant to Section 8.7 (Royalties) Janssen will pay to Morphic [***] of the royalties paid to Janssen by the applicable Compulsory Sublicensee and (b) if Janssen is compensated on any basis other than on a royalty basis, then Janssen will pay to Morphic [***] of such other amounts paid to Janssen by the applicable Compulsory Sublicensee.

8.11. **Invoicing and Payment**.

8.11.1. **FTE Costs and Out-of-Pocket Costs**. For any FTE Costs and Out-of-Pocket Costs incurred in connection with the performance of the Morphic Research Activities for which Janssen is obligated to reimburse Morphic pursuant to Section 2.3.1 (Allocation of Costs), payments to Morphic for such costs will be made upon invoice approval and no later than [***] after the invoice date. All such invoices will include the purchase order number that will be sent to Morphic upon completion of the applicable Morphic Research Activities in the applicable Calendar Quarter. Janssen will not be under any obligation to process any invoice unless such invoice includes the following information: (a) the invoice number; (b) invoice date; (c) dollar amount of invoice; (d) purchase order number; (e) explanation of work completed; (f) remit to address; and (g) bill to name and address. Invoices to be provided under this Section 8.11.1 (FTE

Costs and Out-of-Pocket Costs) will be sent to: Accounts Payable, Johnson & Johnson Shared Services, P.O. Box 16571, New Brunswick, NJ, 08906-6500, or Morphic can elect to enroll in web invoicing service by contacting J&J's Global Services help desk at 732-448-7414.

8.11.2. **Other Payments**. All other payments made under this Agreement by a Party will be made by wire transfer or electronic funds transfer ("**EFT**") in immediately available funds. If either Party elects to make payments under this Agreement by EFT, then the other Party will provide a completed electronic funds transfer form to the paying Party in a timeframe that facilitates timely payment. Each Party will promptly notify the other Party of the appropriate account information to facilitate any such payment.

8.12. **Reports**. For as long as Janssen owes royalties on Net Sales of Product under this ARTICLE 8 (Payments), royalties payments are due and payable [***] after the end of each Calendar Quarter. In each such Calendar Quarter, Janssen will provide Morphic a written report showing, for such Calendar Quarter, (a) aggregate gross sales of Product in the Territory and on a Region-by-Region basis, (b) aggregate Net Sales of Product in the Territory and on a Region-by-Region basis and (c) royalty payments owed for that Calendar Quarter. Royalties are payable in U.S. dollars to the bank account designated in writing by Morphic.

8.13. **Records and Audits**.

8.13.1. **Audit of Morphic**. Morphic will keep, and will instruct its Affiliates and Sublicensees to keep, such accounting records as are necessary to permit Janssen to verify FTE Costs invoiced by Morphic under this Agreement. Morphic will, and will cause its Affiliates and Sublicensees to retain such records at the respective places of business of Morphic and its Affiliates for at least the [***] after the Calendar Year to which such records pertain. Until expiration of such retention period, Janssen may, at Janssen's expense, cause an independent certified accountant that is an internationally recognized expert in the field of audit selected by Janssen and reasonably acceptable to Morphic to audit such records, subject to the terms of Section 8.14 (Conduct of Audits). If any such audit determines that Janssen overpaid Morphic, then Janssen may credit such amount against any other payments owed to Morphic under this Agreement, or, to the extent that there are not sufficient payments then due to Morphic hereunder against which Janssen may fully credit such overpayment, then Morphic will refund to Janssen the uncreditable amount of such overpayment no later than [***] after receipt of the applicable audit report.

8.13.2. **Audit of Janssen**. Janssen will keep, and will instruct its Affiliates and Sublicensees to keep, such accounting records as are necessary to

permit Morphic to confirm the accuracy of Janssen's financial records related to the royalty calculations and other amounts paid or payable by Janssen under this Agreement. Janssen will, and will cause its Affiliates and Sublicensees to, retain such records at the respective places of business of Janssen and its Affiliates for at least the [***] after the Calendar Year to which such records pertain. Until expiration of such retention period, Morphic may, at Morphic's expense, cause an independent certified accountant that is an internationally recognized expert in the field of audit selected by Morphic and reasonably acceptable to Janssen to audit such records, subject to the terms of Section 8.14 (Conduct of Audits). If any such audit determines that Janssen underpaid Morphic, then Morphic may offset such amount against any other payments owed to Janssen under this Agreement, or, to the extent that there are not sufficient payments then due to Janssen hereunder against which Morphic may fully offset such underpayment, then Janssen will pay to Morphic the amount of such underpayment which is not offset as provided above no later than [***] after receipt of the applicable audit report.

8.13.3. **Audit Dispute**. If the audited Party disagrees with the findings of the audit report, then the Parties will first seek to resolve the matter between themselves. If the Parties fail to reach agreement with respect to such matter, then either Party may refer such matter for resolution in accordance with the dispute resolution provisions set forth in Section 15.1 (Discussion by Executive Officers; Arbitration).

8.14. **Conduct of Audits**. It is a condition to the conduct of any audit permitted by Section 8.13 (Records and Audits) that the accountant sign and deliver to the audited Party a confidentiality agreement as reasonably requested by the audited Party. The Party engaging such accountant will require such accountant to share the findings of any such audit with both Parties. The audit report will only contain the information relevant to support the statement as to whether FTE Costs, royalties or payments due (as applicable) were calculated and paid accurately and will not include any Confidential Information disclosed to the auditor during the course of the audit. The auditing Party will pay for any such audit under Section 8.13 (Records and Audits), unless: (a) in the case of an audit under Section 8.13.1 (Audit of Morphic), such audit determines that Janssen overpaid Morphic by more than [***] of the amount owed, in which case Morphic will reimburse Janssen for the reasonable and documented fees and expenses of the auditor paid by Janssen for such audit; and (b) in the case of an audit under Section 8.13.2 (Audit of Janssen), such audit determines that Janssen underpaid Morphic by more than [***] of the amount owed, in which case Janssen will reimburse Morphic for the reasonable and documented fees and expenses of the auditor paid by Morphic for such audit. Each Party may inspect all such records no more frequently than once every [***], during normal business hours with at least [***] prior written notice. An

audit of the records relating to a particular Calendar Year may be conducted once and not more than once.

8.15. **Currency Exchange**. All payments under this Agreement must be made in U.S. dollars. If Products are sold in a currency other than U.S. dollars, for purposes of calculating royalties, then revenues from those sales must be expressed in U.S. dollars using the Currency Hedge Rates. During any period where Janssen is paying royalties, not later than [***] after the Currency Hedge Rates for the next Calendar Year are available, Janssen will notify Morphic of the Currency Hedge Rates for the local currency of each country in the Territory and all relevant details. The Currency Hedge Rates for a Calendar Year will remain unchanged during that Calendar Year.

8.16. **Taxes**.

8.16.1. **Indirect Taxes**. Amounts payable under this Agreement do not include any sales, use, excise, value added or other applicable taxes, tariffs or duties. If any taxing authority imposes a VAT, GST, sales, use, service, consumption, business or similar Tax with respect to the work undertaken under this Agreement, then Janssen agrees to pay that amount if specified in a valid invoice or supply exemption documentation. For avoidance of doubt, Morphic will not be entitled to pass on to Janssen, and Janssen will not be obligated to pay or bear, any Tax that is based on Morphic's real, personal or intangible property (whether owned or leased), corporate structure, franchise, continuing business operations, income, gross receipts, capital stock, net worth or imposed with respect to Morphic's engagement of employees or independent contractors or that Morphic incurs upon engaging any Subcontractor to perform its obligations under this Agreement, in whole or in part, to any affiliated or non-affiliated Third Party. Morphic is solely responsible, to the extent required by Applicable Law, for identifying, billing and collecting the Taxes payable by Janssen in all relevant federal, state, county, municipal and other taxing jurisdictions and for filing all required tax returns in a timely manner. To the extent that Morphic does not provide Janssen a valid invoice (*i.e.*, an invoice compliant with this Agreement and the rules and regulations of the jurisdiction of both Morphic and Janssen, including separate identification of the Tax where legally required), Morphic will be responsible for any penalty resulting directly from such noncompliance. The Parties will cooperate in good faith to minimize taxes to the extent legally permissible.

8.16.2. **Withholding Taxes**. Janssen will make all payments to Morphic under this Agreement without deduction or withholding for Taxes except to the extent that any such deduction or withholding is required by law in effect at the time of payment.

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

(a) Any Tax required to be withheld on amounts payable under this Agreement will be deducted from amounts otherwise due to Morphic under this Agreement and paid by Janssen on behalf of Morphic to the appropriate Governmental Authority and Janssen will furnish Morphic with proof of payment of such Tax. Any such Tax required to be withheld will be an expense of and borne by Morphic. If any such Tax is assessed against and paid by Janssen, then Morphic will indemnify and hold harmless Janssen from and against such Tax.

(b) Janssen and Morphic will cooperate with respect to all documentation required by any taxing authority or reasonably requested by Janssen to secure a reduction in the rate of applicable withholding Taxes. On the Effective Date, Morphic will deliver to Janssen an accurate and complete Internal Revenue Service Form W-9 certifying that Morphic is a resident of the United States.

8.16.3. **Paying Agent**. Janssen Research & Development, LLC, a New Jersey limited liability company having its principal place of business at 920 U.S. Route 202 (P.O. Box 300), Raritan, NJ 08869 ("**JRD**"), acting as paying agent for Janssen, may make certain payments due under this Agreement, and Janssen will reimburse JRD for all such payments

8.16.4. **Transfer of Obligations or Rights**. Notwithstanding the foregoing, if Janssen takes any action, including an assignment or transfer of its rights and obligations to an Affiliate that is not a U.S. person (as defined in Section 7701(a)(30) of the Code), and if as a result of such action by Janssen, such Affiliate or Janssen is required by law to withhold Taxes that were not otherwise applicable, from or in respect of any amount payable under this Agreement, then any such amount payable under this Agreement shall be increased to take into account such withholding Taxes as may be necessary so that, after making all required withholdings (including withholdings on the withheld amounts) Morphic receives an amount equal to the sum it would have received if the transfer to an Affiliate, that is not a U.S. person, had not occurred. In the event the Agreement is assigned or transferred to a Third Party that is not a U.S. person and Third Party is required by law to withhold Taxes that were not otherwise applicable, then any such amount payable under this Agreement shall be increased by the Third Party to take into account such withholding Taxes as may be necessary so that, after making all required withholdings (including withholdings on the withheld amounts), Morphic receives an amount equal to the sum it would have received if the transfer to a Third Party, that is not a U.S. person, had not occurred.

8.17. **Late Payments**. If either Party fails to make timely payment of any amount pursuant to this ARTICLE 8 (Payments), then any such payment that is not paid on or before the due date that is due under this ARTICLE 8 (Payments) will bear

interest, to the extent permitted by Applicable Laws, at the Applicable Rate, effective for the first date on which payment was delinquent and calculated on the number of days such payment is overdue. In the event that LIBOR ceases to exist and either Party fails to make timely payment of any amount pursuant to this ARTICLE 8 (Payments), Janssen will promptly provide to Morphic written notice of the Janssen benchmark interest rate that replaces LIBOR as the Applicable Rate.

9. INTELLECTUAL PROPERTY.

9.1. **Ownership**. Subject to the provisions of ARTICLE 7 (License Grants) and this ARTICLE 9 (Intellectual Property), ownership of any Inventions that are conceived, created, invented, made or reduced to practice by or on behalf of the Parties (solely or jointly) in the course of performing the Research Activities will be allocated between the Parties as follows:

9.1.1. **Improvements to Morphic Technology**. Morphic will own any Invention that is an improvement to the Morphic Platform (such Inventions, "**Morphic Platform Inventions**").

9.1.2. **Other Inventions**.

(a) Except as expressly set forth in Section 9.1.1 (Improvements to Morphic Technology) and subject to the licenses granted by Morphic to Janssen pursuant to Section 7.1 (Research Term Licenses) and Section 7.2 (Development and Commercialization Licenses to Janssen), as between the Parties, (i) Morphic will own all rights, title and interests in and to any Invention made, conceived, discovered or otherwise generated solely by or on behalf of Morphic in the performance of Morphic Research Activities under this Agreement, and any Patents that Cover such Invention, (ii) Janssen will own all rights, title and interests in and to any Invention made, conceived, discovered or otherwise generated solely by or on behalf of Janssen in the performance of activities under this Agreement (including all Janssen Research Activities) (each, a "**Janssen Product Invention**") and any Patents that Cover any Janssen Product Invention and (iii) the Parties will jointly own all rights, title and interests in and to any Invention made, conceived, discovered or otherwise generated jointly by or on behalf of the Parties in the course of performing Research Activities under this Agreement (each, a "**Joint Invention**"), any Know-How made, conceived, discovered or otherwise generated jointly by or on behalf of the Parties in the course of performing Research Activities under this Agreement ("**Joint Know-How**") and any Patents (excluding Morphic Platform Patents and Morphic Platform and Product Patents) that Cover any Joint Invention or Joint Know-How ("**Joint**

Patents" and together with the Joint Inventions, the "**Joint Technology**").

(b) **Inventorship**. Inventorship of patentable inventions conceived or reduced to practice during the course of performance of activities pursuant to this Agreement will be determined in accordance with U.S. patent laws.

9.2. **Assignment of Intellectual Property**.

9.2.1. **Janssen Assignment of Morphic Platform Inventions**. Janssen will and hereby does assign to Morphic all of its rights, title and interests in and to all Morphic Platform Inventions, and Morphic hereby accepts such assignment.

9.2.2. **Morphic Assignment of Assigned Product-Specific Technology**. Upon exercise by Janssen of an Option with respect to a Research Program in accordance with Section 3.2 (Option Exercise), Morphic will, and hereby does, assign to Janssen (without any further action required on the part of Janssen) all Product-Specific Patents that Cover any Licensed Compound or Product that is the subject of the Research Program with respect to which Janssen exercised an Option (the "**Assigned Product-Specific Patents**") and all Know-How that solely relates to any Licensed Compound or Product that is the subject of the Research Program with respect to which Janssen exercised an Option (the "**Assigned Product-Specific Know-How**" and together with the Assigned Product-Specific Patents, the "**Assigned Product-Specific Technology**"), and Janssen hereby accepts such assignment. Effective upon the assignment of any Assigned Product-Specific Patent and Assigned Product-Specific Know-How, such Patent will become a Janssen Patent (and will no longer be a Morphic Patent) and such Know-How will become Janssen Know-How (and will no longer be Morphic Know-How), but such Patent will remain a Product-Specific Patent for so long as such Patent satisfies the definition thereof with respect to the applicable Research Program and Product.

9.2.3. **Cooperation and Assistance**. The Party required to assign to the other Party rights in any Patents or Know-How pursuant to the foregoing Section 9.2.1 (Janssen Assignment of Morphic Platform Inventions) and Section 9.2.2 (Morphic Assignment of Assigned Product-Specific Technology) (the "**Assigned Technology**" and the "**Assigning Party**" and the "**Owning Party**," respectively) will take (and cause its Affiliates, and their respective employees, agents and contractors to take) such further actions reasonably requested by the Owning Party to evidence such assignment and to assist the Owning Party in obtaining Patent and other Intellectual Property rights protection for such Assigned

Technology, including executing further assignments, consents, releases and other commercially reasonable documentation and providing good faith testimony by affidavit, declaration, in-person or other proper means in support of any effort by the Owning Party to establish, perfect, defend or enforce its rights in any such Assigned Technology through prosecution of governmental filings, regulatory proceedings, litigation and other means, including through the filing, prosecution, maintenance and enforcement of such Assigned Technology. The Assigning Party will obligate its Affiliates and Subcontractors to assign all applicable Assigned Technology to the Assigning Party (or directly to Owning Party) so that Assigning Party can comply with its obligations under this Section 9.2.3 (Cooperation and Assistance), and the Owning Party will promptly obtain such assignment. Without limitation, the Assigning Party will cooperate with the Owning Party if the Owning Party applies for U.S. or foreign patent protection for such Assigned Technology and will obtain the cooperation of the individual inventors of any such Assigned Technology. If the Assigning Party is unable to assign any Assigned Technology, then the Assigning Party hereby grants and agrees to grant to the Owning Party a royalty-free, fully paid-up, exclusive (even as to the Assigning Party, subject to the terms of this Agreement, including the licenses granted to the Owning Party pursuant to ARTICLE 7 (License Grants)), perpetual, irrevocable license (with the right to grant sublicenses through multiple tiers) under such Assigned Technology for any and all purposes.

9.2.4. **Joint Technology**. Each Party will and hereby does assign to the other Party a joint interest in and to all Joint Technology, and the other Party hereby accepts such assignment. Each Party will take (and cause its Affiliates and Sublicensees, and their respective employees, agents and contractors to take) such further actions reasonably requested by the other Party to evidence such assignment and to assist the Parties in obtaining jointly-owned Patent and other Intellectual Property rights protection for Inventions within the Joint Technology, including executing further assignments, consents, releases and other commercially reasonable documentation and providing good faith testimony by affidavit, declaration, in-person or other proper means in support of any effort by the Parties to establish, perfect, defend or enforce their rights in any Joint Technology through prosecution of governmental filings, regulatory proceedings, litigation and other means, including through the filing, prosecution, maintenance and enforcement of the Joint Technology. Each Party will cause its Affiliates, Sublicensees and Third Party contractors (including all Subcontractors) to assign all Joint Technology to such Party so that each Party can comply with its obligations under this Section 9.2.4 (Joint Technology). Without limitation, each Party will cooperate with the other Party if the Parties agree to apply for U.S. or foreign patent protection for such Joint Technology and will obtain the cooperation of the individual inventors of any such Joint Technology. If

either Party is unable to assign a joint interest in any Joint Technology, then such Party hereby grants and agrees to grant to the other Party a royalty-free, fully paid-up non-exclusive (subject to the terms of this Agreement, including the licenses granted pursuant to ARTICLE 7 (License Grants)), perpetual, irrevocable license (with the right to grant sublicenses through multiple tiers) under such Joint Technology for any and all purposes.

9.3. **Exploitation of Joint Technology**. Subject to the licenses granted and exclusivity obligations set forth under this Agreement, each Party will exercise its ownership rights in and to any such Joint Technology, including the right to license and sublicense or otherwise to exploit, transfer or encumber its ownership interest, without an accounting or obligation to, or consent required from, the other Party. To the extent any further consent is required to enable a Party to so license or exploit its interest in the Joint Technology, the other Party will grant consent promptly upon request. Each Party will require its employees (or Third Party(ies) performing Research Activities on its behalf) to assign to such Party any Invention made, conceived, discovered or otherwise generated by such employees (or such Third Party(ies)) and to cooperate with such Party in connection with obtaining patent protection therefor.

9.4. **Disclosure**. Each Party will promptly disclose to the other Party all Inventions within the Joint Technology, Janssen will promptly disclose to Morphic all Morphic Platform Inventions and Morphic will promptly disclose to Janssen all Inventions made in the course of activities conducted pursuant to this Agreement, in each case, that such Party develops or invents, whether solely or jointly with others (in any event, prior to the filing of any patent application with respect to such Inventions), including all invention disclosures or other similar documents submitted to such Party by its or its Affiliates' employees, agents, or independent contractors relating thereto. Each Party will also promptly respond to reasonable requests from the other Party for additional information relating thereto.

9.5. **Joint Research Agreement**. This Agreement is a joint research agreement in accordance with 35 U.S.C. §103(c)(3) to develop and commercialize Compounds or Products. Neither Party is required by this reference to have any Patent take advantage of or become subject to such §103(c)(3) except in accordance with the provisions of ARTICLE 10 (Patent Prosecution and Maintenance) regarding the Prosecution and Maintenance of such Patent.

9.6. **Trademarks**. Janssen will, in its sole discretion, select and own all Trademarks used in connection with the Exploitation of Products.

10. PATENT PROSECUTION AND MAINTENANCE.

10.1. **Morphic Prosecution and Maintenance of Patents**. During the Research Term for each Research Program and until the date, if any, on which Janssen exercises

an Option for a Research Program in accordance with Section 3.2 (Option Exercise)(the "**Prosecution Term**"), Morphic will be responsible for the Prosecution and Maintenance of those Morphic Patents and those Joint Patents that Cover Compounds or Products that are the subject of such Research Program or under which a Party practices in the performance of the Research Activities for such Research Program. During the Prosecution Term, Morphic will file or cause to be filed, and prosecute or cause to be prosecuted to allowance or final rejection all Morphic Patents and Joint Patents in at least those countries listed on **Schedule 10.1** (the "**Jurisdictions**"). At all times during the Term, Morphic will be responsible for the Prosecution and Maintenance of the Morphic Platform Patents and Morphic Platform and Product Patents (together with all other Patents described in this Section 10.1 (Morphic Prosecution and Maintenance of Patents) during the Prosecution Term, the "**Morphic Prosecuted Patents**").

10.2. **Janssen Input**. Within [***] after the filing in the United States of an application within the Morphic Patents or a Joint Patent, Morphic will provide Janssen a written request inquiring in which countries or regions Janssen would desire Morphic to file a corresponding international application, in addition to the Jurisdictions. Janssen will so notify Morphic within [***] after such notice of which countries or regions Janssen would desire Morphic to file a corresponding international application. If Morphic does not desire to file such an international application in a country or region outside the Jurisdictions so requested by Janssen, then Morphic will so notify Janssen and then Janssen will have the option to request that Morphic file such international application in such countries or regions outside the Jurisdictions. Morphic will file such international applications in such countries or regions outside the Jurisdictions, and Janssen will reimburse Morphic for its out-of-pocket expenses in Prosecuting and Maintaining such requested international patent applications. Janssen, however, will have sole discretion and decision-making authority over whether to discontinue any Prosecution and Maintenance of such requested international patent applications in those countries or regions outside the Jurisdictions, upon [***] written notice to Morphic.

10.3. **Information Sharing**. Upon Janssen's reasonable request during the Term, Morphic will provide to Janssen: (a) copies of or access to all relevant patent applications included in the Morphic Prosecuted Patents; (b) copies of or access to any existing prior art searches for such applications; and (c) copies of or access to all correspondence to and from the U.S. Patent and Trademark Office and foreign patent offices for such applications.

10.4. **Review and Consult**. Janssen will have the right to consult with Morphic regarding the content of the patent applications included in the Morphic Prosecuted Patents in advance of filing thereof with any patent authority, prior art searches and correspondence and to comment thereon to Morphic, or at Morphic's request, to Morphic's designated outside counsel, and Morphic will provide Janssen with all material correspondence received from any patent authority in connection therewith. In addition, Morphic will provide Janssen with drafts of proposed

material filings and correspondence to any patent authority in connection with the Prosecution and Maintenance of any Morphic Prosecuted Patent for Janssen's review and comment prior to the submission of such proposed filings and correspondence. Morphic will consider in good faith all such comments offered by Janssen and will incorporate such comments where appropriate.

10.5. **Janssen Prosecution and Maintenance of Patents**. Janssen will be solely responsible for the Prosecution and Maintenance of all Janssen Patents. Following the exercise of an Option for a Research Program in accordance with Section 3.2 (Option Exercise), Janssen will be responsible for the Prosecution and Maintenance of all Joint Patents, Assigned Product-Specific Patents and Morphic Platform and Product Patents that Cover any Licensed Compound or Product that is the subject of such Research Program (together with any Janssen Patents, the "**Janssen Prosecuted Patents**" and the applicable Patents that were previously Morphic Prosecuted Patents will thereafter become Janssen Prosecuted Patents for purposes of this Agreement). Notwithstanding anything to the contrary set forth in this Agreement, Morphic may file applications claiming priority to such Morphic Platform and Product Patents, including divisionals, continuations or continuations in part, in each case, solely in the event such applications do not include any claims that Cover (a) any Licensed Compound or Product incorporating any such Licensed Compound that is the subject of such Research Program, (b) any composition (*e.g.*, a pharmaceutical composition) containing any such Licensed Compound or Product, (c) any use or a method of using any such Licensed Compound, Product or composition or (d) any method for Manufacturing any such Licensed Compound, Product or composition. Morphic will execute such documents and perform such acts as may be reasonably necessary to allow Janssen to initiate or continue such Prosecution and Maintenance of the Janssen Prosecuted Patents at Janssen's sole expense. Janssen may cease Prosecution and Maintenance of any Janssen Prosecuted Patent on a country-by-country basis in the Territory by providing written notice to Morphic. If Janssen elects to cease Prosecution and Maintenance of any Janssen Prosecuted Patent in a country, then Morphic, at its sole discretion and cost, may continue Prosecution and Maintenance of such Janssen Prosecuted Patent in such country in Morphic's name. In addition, Janssen will provide Morphic with drafts of proposed material filings and correspondence to any patent authority in connection with the Prosecution and Maintenance of any Morphic Platform and Product Patent, Joint Patent or Assigned Product-Specific Patent for Morphic's review and comment prior to the submission of such proposed filings and correspondence. In no event, however, will Janssen have any obligation to incorporate such comments offered by Morphic.

10.6. **Cooperation**. Each Party will reasonably cooperate with the other Party in the filing, Prosecution and Maintenance of the Morphic Patents and Joint Patents pursuant to this Agreement. Such cooperation includes promptly executing all documents, or requiring inventors, Subcontractors, employees, former employees (to the extent reasonably available) and consultants and agents to execute all

documents, as reasonable and appropriate so as to enable the Prosecution and Maintenance of any such Patents in any country. Notwithstanding Janssen's right to Prosecute and Maintain the Janssen Prosecuted Patents or Morphic's right to Prosecute and Maintain the Morphic Prosecuted Patents, the Parties will, and will cause their Affiliates to, cooperate and implement reasonable patent filing and prosecution strategies (including filing divisionals, continuations or otherwise) so that, to the extent reasonable and feasible, Product-Specific Patents and Morphic Platform Patents are pursued in mutually exclusive patent applications to avoid the creation of Morphic Platform and Product Patents where reasonably practicable. In addition, Janssen will Prosecute and Maintain the Morphic Platform and Product Patents in accordance with Section 10.5 (Janssen Prosecution and Maintenance of Patents) using nationally recognized outside counsel that is mutually acceptable to each Party.

10.7. **No Attorney-Client Privilege**. For the avoidance of doubt, nothing in this ARTICLE 10 (Patent Prosecution and Maintenance) is deemed to create an attorney-client relationship between Janssen's in-house counsel and Morphic or between outside counsel representing Janssen and Morphic.

11. ENFORCEMENT OF INTELLECTUAL PROPERTY.

11.1. **Notification**. If either Party becomes aware of any existing or threatened infringement or misappropriation of any Morphic Patent, Janssen Patent, Joint Patent, Morphic Know-How, Janssen Know-How or Joint Know-How in the Field in the Territory by a Third Party with respect to a Compound or Product or the Exploitation thereof (a "**Competitive Infringement**"), then such Party will promptly notify the other Party in writing to that effect and the Parties will consult with each other regarding any actions to be taken with respect to such Competitive Infringement. For the avoidance of doubt, the term "Competitive Infringement" includes any counterclaims alleging that a Morphic Patent, Janssen Patent or Joint Patent is invalid or unenforceable or that a product or process does not infringe or misappropriate a Morphic Patent, Janssen Patent, Joint Patent, Morphic Know-How, Janssen Know-How or Joint Know-How.

11.2. **Enforcement Actions**.

11.2.1. **Before Option Exercise**. During the Option Period with respect to a Research Program, Morphic will have the sole right, but not the obligation, to bring and control any legal action to enforce any Morphic Patents or Joint Patents that Cover, and any Morphic Know-How or Joint Know-How that relate to, any Compound or Product that is the subject of such Research Program against any Competitive Infringement in the Territory as it reasonably determines appropriate, and Morphic will consider in good faith the interests of Janssen in such enforcement of such Patents. Janssen will provide reasonable cooperation to Morphic in connection with such legal action in the Territory, including by promptly supplying or

executing all papers and instruments, or requiring its employees to supply or execute such papers and instruments, as may be necessary for purposes of initiating and pursuing such legal action in the Territory.

11.2.2. **After Option Exercise**. Following Janssen's exercise of an Option with respect to a Research Program pursuant to Section 3.2 (Option Exercise), Janssen will have (i) the sole right, but not the obligation, to bring and control any legal action to enforce any Assigned Product-Specific Patents and (ii) the first right, but not the obligation, to bring and control any legal action to enforce any Morphic Platform and Product Patents, Product-Specific Patents or Joint Patents, in each case ((i) and (ii)), that Cover any Licensed Compound or Product that is the subject of such Research Program against any Competitive Infringement in the Territory as it reasonably determines appropriate, and Janssen will consider in good faith the interests of Morphic in such enforcement of such Patents. If Janssen fails to commence enforcement of any Morphic Platform and Product Patents, Product-Specific Patents or Joint Patents, in each case, that are not Assigned Product-Specific Patents against a Competitive Infringement in the Territory within a period of [***] after a request from Morphic to do so, then Morphic may bring and control any legal action in the Territory to enforce any Morphic Platform and Product Patents, Product-Specific Patents or Joint Patents, in each case, that are not Assigned Product-Specific Patents and that Cover the applicable Product against such Competitive Infringement and Janssen will provide reasonable cooperation to Morphic in connection with such legal action in the Territory, including by promptly supplying or executing all papers and instruments, as may be necessary for the purposes of initiating and pursuing such legal action in the Territory.

11.2.3. **Settlement**. With respect to any legal action identified above in this Section 11.2 (Enforcement Actions), the Party controlling such action will have the right to settle or otherwise dispose of such action on such terms as such Party reasonably determines appropriate. Notwithstanding the foregoing, no such settlement or other disposition will (a) impose any monetary restriction or obligation on or admit fault of the other Party or (b) adversely affect the other Party's rights under this Agreement to any such Patent or Know-How then being enforced or defended, including any abandonment or intentional failure to maintain such Patent then being enforced or defended, in each case ((a) and (b)), without the prior written consent of the other Party.

11.3. **Patent Listing**. Janssen will have the full and exclusive right, in its sole discretion, to determine and control the listing of any Patent (including any Morphic Patent or Joint Patent) in the then-current edition of the United States Food and Drug Administration publication "Approved Drug Products with Therapeutic Equivalence Evaluations" (the "**Orange Book**") in connection with the Regulatory Approval of

any Product, or in equivalent patent listings in any other country within the Territory.

11.4. **Enforcement of Listed Patents**. The provisions of Section 11.2 (Enforcement Actions) notwithstanding, the following will apply with respect to any notification provided by a Third Party to Morphic or Janssen under 21 U.S.C. § 355(j)(2)(B) making a certification described in 21 U.S.C. §355(j)(2)(A)(vii)(IV) with respect to any Patent jointly or solely owned by Morphic that is listed in the Orange Book for a Product and with respect to equivalent actions in the United States or in any other country within the Territory (a "**Paragraph IV Certification**"):

11.4.1. The Party receiving a Paragraph IV Certification will, without any avoidable delay and in any case within five Business Days after receiving such a Paragraph IV Certification, notify the other Party in writing and will attach a copy of the Paragraph IV Certification to such notification. Janssen will have the sole right to determine a course of action with respect to any such proceedings, including negotiation of an offer of confidential access, and Morphic will cooperate fully with Janssen with respect to such course of action at Janssen's expense.

11.4.2. Janssen will have the right, but not the obligation, in its sole discretion, to initiate any infringement proceeding as a result of the Paragraph IV Certification with respect to a Product, including the commencement of a patent infringement action under 35 U.S.C. § 271(e)(2)(A), or under an equivalent statute or regulation within any other country in the Territory (a "**Paragraph IV Proceeding**"). Any such Paragraph IV Proceeding commenced by Janssen under this Section 11.4 (Enforcement of Listed Patents) will be conducted in accordance with the provisions of Section 11.2 (Enforcement Actions). Morphic will reasonably assist Janssen in any such Paragraph IV Proceeding, at Janssen's expense.

11.5. **Recoveries**. Any recoveries resulting from an enforcement action pursuant to Section 11.2 (Enforcement Actions) or Section 11.4 (Enforcement of Listed Patents) will be first applied against payment of each Party's costs and expenses in connection therewith. Any such recoveries in excess of such costs and expenses will be shared as follows: [***] of all such recoveries shall be paid to the Party initiating such suit, action or proceeding and [***] of all such recoveries shall be paid to the other Party.

11.6. **Patent Term Restoration**. The Parties will cooperate with each other in obtaining patent term restoration or supplemental protection certificates or their equivalents in any country in the Territory where applicable to Morphic Patents and Joint Patents.

11.7. **Third Party Claims**. Each Party will promptly inform the other Party in writing if such Party receives written, or otherwise becomes aware, of alleged infringement,

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

misappropriation, or other violation of a Third Party's Intellectual Property based upon Morphic's performance of its obligations or exercise of its rights hereunder. Except as otherwise set forth under this Agreement (including under Section 8.9.1(a) (Morphic Research Activities) and Section 13.3 (Indemnification)), Morphic will have the sole right to defend against any such claim brought against it. Morphic will keep Janssen advised of all material developments in the conduct of any proceedings in defending any claim of alleged infringement, misappropriation, or other violation related to any Compounds, Products or Morphic Research Activities and will reasonably cooperate with Janssen in the conduct of such defense. In no event may Morphic settle any such infringement, misappropriation, or other violation claim in a manner that would (a) impose any monetary restriction or obligation on or admit fault of Janssen or (b) adversely affect Janssen's rights under this Agreement, including any abandonment or intentional failure to maintain any Patent, in each case ((a) and (b)), without the prior written consent of Janssen.

12. CONFIDENTIALITY.

12.1. **Confidential Information**.

12.1.1. **Confidential Information**. The term "**Confidential Information**" means all Know-How or material in tangible form disclosed by a Party (the "**Disclosing Party**") to the other Party (the "**Receiving Party**") in connection with the course and conduct of activities under this Agreement, including Know-How related to the Disclosing Party's current, future and proposed compounds, compositions, and biological materials. Each Party will be considered a Disclosing Party and a Receiving Party with regard to Joint Know-How and the terms of this Agreement. All reports provided by Morphic to Janssen under Section 2.8 (Research Reports), all reports provided by Janssen to Morphic under Section 5.3 (Development Reports) and all information provided by Janssen to Morphic under Section 8.12 (Reports) will each be the Confidential Information of Janssen. Notwithstanding any other provisions herein, Confidential Information does not include information which, to the extent the Receiving Party can prove by competent evidence,

(a) was known to Receiving Party or any of its Affiliates prior to the time of disclosure;

(b) is at the time of disclosure hereunder or later becomes public knowledge through no fault or omission of Receiving Party or any of its Affiliates;

(c) is obtained by Receiving Party or any of its Affiliates from a Third Party under no obligation of confidentiality to Disclosing Party; or

(d) has been independently developed by employees, subcontractors, consultants or agents of Receiving Party or any of its Affiliates without the aid, application or use of Disclosing Party's Confidential Information, as evidenced by contemporaneous written records.

12.1.2. **Restrictions**. During the Term and for [***] thereafter, Receiving Party will take reasonable steps to keep all Disclosing Party's Confidential Information in confidence with at least the same degree of care with which Receiving Party holds its own confidential information and in any event no less than a reasonable degree of care. Except as otherwise permitted under this Agreement, Receiving Party will not use Disclosing Party's Confidential Information except in connection with the performance of its obligations and exercise of its rights under this Agreement. Receiving Party has the right to disclose Disclosing Party's Confidential Information without Disclosing Party's prior written consent, to the extent and only to the extent reasonably necessary, to its Affiliates and its and their respective employees, subcontractors, consultants or agents who have a need-to-know such Confidential Information in order to perform its obligations and exercise its rights under this Agreement and who are required to comply with the restrictions on use and disclosure in this Section 12.1.2 (Restrictions). Receiving Party will use reasonable efforts to cause those entities and persons to comply with the restrictions on use and disclosure in this Section 12.1.2 (Restrictions). Receiving Party assumes responsibility for those entities and persons maintaining Disclosing Party's Confidential Information in confidence and using same only for the purposes described herein.

12.1.3. **Permitted Disclosures**. Receiving Party may disclose Disclosing Party's Confidential Information to the extent (and only to the extent) such disclosure is reasonably necessary in the following instances:

(a) in order to comply with Applicable Law (including any securities law or regulation or the rules of a securities exchange) or with a legal or administrative proceeding;

(b) in connection with prosecuting or defending litigation, regulatory approval and other regulatory filings and communications, and filing, prosecuting and enforcing Patents in connection with Receiving Party's rights and obligations pursuant to this Agreement; and

(c) in connection with exercising its rights hereunder, to (i) its Affiliates; (ii) potential and future collaborators (including Sublicensees and Third Party licensees and sublicensees); (iii) permitted actual or potential acquirers or assignees; and (iv) investment bankers, investors and lenders;

provided that (A) with respect to sub-sections (c)(i) and (c)(ii) above, where reasonably possible, Receiving Party will notify Disclosing Party of Receiving Party's intent to make any disclosure pursuant thereto sufficiently prior to making such disclosure so as to allow Disclosing Party adequate time to take whatever action it may deem appropriate to protect the confidentiality of the information to be disclosed, and (B) with respect to Section (c), each of those named people and entities agree in writing to comply with restrictions on use and disclosure of the Disclosing Party's Confidential Information that are no less restrictive than the restrictions set forth in this ARTICLE 12 (Confidentiality).

12.2. **Return of Confidential Information**. Upon the expiration or termination of this Agreement, the Receiving Party will return (or, as directed by the Disclosing Party, destroy) all Confidential Information of the Disclosing Party to the Disclosing Party that is in the Receiving Party's possession or control (other than any Confidential Information required to continue to exercise a Party's rights that survive termination of this Agreement), *provided*, *however*, copies may be retained and stored solely for the purpose of determining its obligations under this Agreement, subject to the non-disclosure and non-use obligation under this ARTICLE 12 (Confidentiality). In addition, the Receiving Party will not be required to return or destroy Confidential Information contained in any computer system back-up records made in the ordinary course of business; *provided* that such Confidential Information may not be accessed without the Disclosing Party's prior written consent or as required by Applicable Law.

12.3. **Publications**. Morphic may not publish the results from any Research Activities for a Research Program (a) prior to the expiration of the Option Period for the applicable Research Program or (b) at any time during the Term with respect to any Research Program for which Janssen has exercised an Option in accordance with Section 3.2 (Option Exercise), in each case ((a) and (b)), without Janssen's prior written consent, which consent Janssen may withhold for any reason. After the expiration of the Option Period for a Research Program with respect to which Janssen did not exercise an Option in accordance with Section 3.2 (Option Exercise), Morphic may publish results from the Morphic Research Activities conducted for such Research Program, provided that Morphic first gives Janssen a [***] period prior to the submission for publication of any abstract, manuscript, poster, slide presentation or other proposed publication material to review such material so that Janssen can ensure that no Janssen Confidential Information is included therein without its permission. Janssen reserves the right to have any of its Confidential Information deleted from such proposed publication material prior to Morphic's submission for publication. Further, if requested by Janssen, Morphic will delay submission of any such proposed publication material for an additional [***] to allow Janssen to seek patent protection for any invention disclosed or referenced therein to which Janssen has any ownership interest. Morphic will acknowledge Janssen's contributions in any such publication unless otherwise instructed by Janssen.

12.4. **Terms of this Agreement; Publicity**.

12.4.1. **Restrictions**. Notwithstanding anything to the contrary set forth in this Agreement, upon execution of this Agreement each Party may issue a press release announcing the existence of this Agreement in the form attached hereto as **Schedule 12.4.1** (Press Release) applicable to each Party. Upon exercise of an Option with respect to any Research Program, the Parties may issue a press release announcing such exercise in a form and substance to be agreed by the Parties in writing. Except as required by Applicable Law, legal process or stock exchange rules, each Party will not issue any other press release or public statement disclosing information relating to this Agreement or the transactions contemplated hereby or the terms hereof without the prior written consent of the other Party.

12.4.2. **Use of Names or Trademarks**. Neither Party will use the name, physical likeness, employee names or Trademarks of the other Party for any purpose without the prior written consent of the other Party, other than as necessary to prepare necessary filings with any Securities and Exchange Commission or comply with the regulations of any such commission, or other regulations applicable to the public sale of securities, including preparing proxy statements or prospectuses. Nothing contained herein will be construed as granting either Party any rights or license to use any of the other Party's Trademarks without separate, express written permission of the owner of such Trademark.

13. REPRESENTATIONS AND WARRANTIES; INDEMNIFICATION; DISCLAIMERS.

13.1. **Representations, Warranties and Covenants**.

13.1.1. **Mutual Representations and Warranties as of the Effective Date**. Each Party represents and warrants to the other Party as of the Effective Date that:

(a) it is duly organized, validly existing and in good standing under the Applicable Law of the jurisdiction of its incorporation and has all requisite corporate power and authority to enter into this Agreement and to perform its obligations, in each case, under this Agreement;

(b) it has the legal right and power to enter into this Agreement, to extend the rights and licenses granted or to be granted to the other in this Agreement, and to fully perform its obligations hereunder;

(c) the performance of this Agreement by such Party does not create a breach or default under any other agreement to which it is a Party;

(d) the execution, delivery and performance of this Agreement by such Party does not conflict with any agreement, instrument or understanding, oral or written, to which it is a party or by which it is bound, nor violate any Applicable Law or regulation of any Governmental Authority; and

(e) it has obtained all necessary government authorizations, consents, approvals, licenses, exemptions of or filings or registrations with Governmental Authorities, under any Applicable Law currently in effect, that are or will be necessary for the transactions contemplated by this Agreement or any other agreement or instrument executed in connection herewith, or for the performance by it of its obligations under this Agreement.

13.1.2. **Morphic Representations and Warranties as of the Effective Date**. In addition to the representations and warranties made by Morphic above and elsewhere in this Agreement, Morphic hereby represents and warrants to Janssen as of the Effective Date that:

(a) it has the full right, power and authority to grant all the right, title and interest in the licenses and Options granted or to be granted to Janssen under this Agreement;

(b) (i) **Schedule 1.108** (Morphic Patents as of the Effective Date) sets forth a complete and accurate list of all Patents existing as of the Effective Date that are owned or Controlled by Morphic or any of its Affiliates and necessary or useful to (A) perform the Research Activities, or (B) Exploit any Compound or Product, (ii) Morphic owns or otherwise Controls all (A) Patents listed on **Schedule 1.108** (Morphic Patents as of the Effective Date) and (B) Know-How related to the Morphic Platform and (iii) except as otherwise noted on **Schedule 1.108** (Morphic Patents as of the Effective Date), Morphic exclusively owns all rights, title, and interests in and to such Patents, and where Morphic does not exclusively own any such Patent, **Schedule 1.108** (Morphic Patents as of the Effective Date) identifies the Third Party owner of such Patent and the Existing In-License pursuant to which Morphic Controls such Patent;

(c) other than any Know-How licensed to Morphic under the CMCC License Agreement, the Morphic Know-How as of the Effective Date constitutes all of the Know-How owned, Controlled or held for use by Morphic or any of its Affiliates that is necessary or useful to (i) perform the Research Activities or (ii) Exploit any Compound or Products as contemplated by this Agreement (other than any Morphic Know-How made, conceived, discovered or otherwise

generated by Morphic in the course of performing Morphic Research Activities under this Agreement);

(d) there is no pending litigation, or litigation that has been threatened in writing, that alleges, or any written communication alleging, that the practice by or on behalf of Morphic of the Morphic Technology or the Morphic Platform prior to the Effective Date has infringed, misappropriated or otherwise violated, or would infringe, misappropriate, or otherwise violate, any of the Intellectual Property of any Third Party;

(e) there are no claims, judgments or settlements against or pending, or amounts with respect thereto, owed by Morphic or any of its Affiliates, with respect to the Morphic Technology or the Morphic Platform, and Morphic has not received written notice threatening any such claims, judgments, or settlements;

(f) to Morphic's Knowledge, practice by or on behalf of Morphic or Janssen under the Morphic Technology or Morphic Platform or the Exploitation by or on behalf of Morphic or Janssen (or their respective Affiliates or sublicensees) of any Compound or Product, in each case, as contemplated under this Agreement, does not and will not infringe any issued patent of any Third Party or, if and when issued, any claim within any published patent application of any Third Party;

(g) no Third Party has challenged the ownership, scope, duration, validity, enforceability, priority, or right to practice under any Morphic Patents or the Patents Covering the Morphic Platform (including, by way of example, through the institution of or written threat of institution of interference, *inter partes* review, reexamination, protest, opposition, nullity, or similar invalidity proceeding before the U.S. Patent and Trademark Office or any foreign patent authority or court);

(h) to Morphic's Knowledge, no Third Party is infringing, misappropriating or otherwise violating, or threatening to infringe, misappropriate, or otherwise violate the Morphic Technology or the Morphic Platform;

(i) all fees required to be paid by Morphic in any jurisdiction in order to maintain the Morphic Patents and the Patents Covering the Morphic Platform have been timely paid and the Morphic Patents are valid, subsisting and, to Morphic's Knowledge, enforceable;

(j) Morphic has not previously assigned, transferred, conveyed or granted any license or other rights under the Morphic Technology in

any way that would conflict with or limit the scope of any of the rights or licenses granted to Janssen hereunder;

(k) Morphic's rights, title and interests to all the Morphic Technology are free of any lien or security interest;

(l) Morphic has obtained, or caused its Affiliates, as applicable, to obtain, assignments from the inventors of all inventorship rights to the Morphic Patents and the Patents Covering the Morphic Platform, and all such assignments are valid and enforceable;

(m) the inventorship of the Morphic Patents is properly identified on each issued patent or patent application in the Morphic Patents;

(n) there are no Third Party agreements pursuant to which Morphic Controls any of the Morphic Technology or Morphic Platform or any Compound;

(o) No Third Party has any rights, title or interests in or to, or any license under, any of the Morphic Technology or Morphic Platform;

(p) no written notice of default or termination has been received or given under any agreement pursuant to which Morphic Controls any Morphic Technology or Patents Covering or Know-How related to the Morphic Platform, including under any Existing In-License, and there is no act or omission by Morphic or its Affiliates that would provide a right to terminate any such agreement;

(q) Morphic and its Affiliates have taken commercially reasonable measures consistent with industry practices to protect the secrecy, confidentiality and value of all Morphic Know-How that constitutes trade secrets under Applicable Law (including requiring all employees, consultants, and independent contractors to execute binding and enforceable agreements requiring all such employees, consultants, and independent contractors to maintain the confidentiality of such Morphic Know-How) and such Morphic Know-How has not been used, disclosed to or discovered by any Third Party except pursuant to such confidentiality agreements and there has not been a breach by any party to such confidentiality agreements;

(r) the Morphic Technology has not been created pursuant to, and are not subject to, any funding agreement with any Governmental Authority or any Third Party, and are not subject to the requirements of the Bayh-Dole Act or any similar provision of any Applicable Law;

(s) Morphic (i) is not excluded from, and has not been convicted of any crime or engaged in any conduct that could result in exclusion from, participation in any state or federal healthcare program, as defined in 42 U.S.C. §1320a-7b(f), for the provision of items or services for which payment may be made by a federal healthcare program, (ii) has not contracted with any employee, contractor, agent, or vendor to perform work under this Agreement who is excluded from participation in any state or federal healthcare program and (iii) is not subject to a final adverse action, as defined in 42 U.S.C.§ 1320a-7a(e) and 42 U.S.C. § 1320a-7a(g), and has no adverse action pending or threatened against it; and

(t) Morphic is in compliance with all Applicable Law, including the federal anti-kickback statute (42 U.S.C. § 1320a-7b), the related safe harbor regulations, and the Limitation on Certain Physician Referrals, also referred to as the "Stark Law" (42 U.S.C. § 1395nn).

13.1.3. **Morphic Covenants**. Morphic covenants to Janssen that:

(a) Morphic will retain the full right, power and authority to grant all the right, title and interest in the licenses and Options granted or to be granted to Janssen under this Agreement;

(b) Morphic will not (i) assign, transfer, convey or grant any license or other rights to its rights, title and interests in or to the Morphic Technology or (ii) incur or permit to exist, with respect to any Morphic Technology, any lien, encumbrance, charge, security interest, mortgage, liability, grant of license to Third Parties or other restriction (including in connection with any indebtedness), in each case of clauses (i) and (ii), in any manner that would conflict with or limit the scope of any of the rights or licenses granted to Janssen hereunder (including any Option rights granted hereunder);

(c) Morphic will not license, sell, assign or otherwise transfer to any Third Party rights under any Morphic Technology (or agree to do any of the foregoing) to Exploit one or more compounds that are designed and intended to modulate, bind to or target (i) any Target or (ii) solely with respect to any Replacement Target MoA, any Target with a Mechanism of Action that is the same as the Mechanism of Action for such Replacement Target MoA;

(d) Morphic will, and will so cause its Affiliate to, (i) remain in compliance in all respects with and (ii) not, without Janssen's written consent, amend in a manner that adversely affects the rights granted to Janssen hereunder or Morphic's ability to fully perform its obligations hereunder, in each case ((i) and (ii)), any Third Party agreements

entered into by Morphic during the Term pursuant to which Morphic Controls any Morphic Technology or Compound or the Morphic Platform (the "**In-Licenses**"). Morphic will provide prompt notice to Janssen of any alleged breach or default of any In-License. If Janssen makes any payments to a Third Party in connection with the cure or other resolution of such alleged breach or default or Morphic, then, notwithstanding anything to the contrary set forth in this Agreement, Janssen may credit the full amount of such payments against any milestone payments, royalties or other amounts payable to Morphic under this Agreement;

(e) Morphic will, and will ensure that its Affiliates, Sublicensees and Subcontractors obtain written agreements from any and all Persons involved in or performing any Research Activities by or on behalf of Morphic that assign such Persons' rights, title and interests in and to any Morphic Technology or Results to Morphic prior to any such person performing such activities;

(f) during the Research Term, Morphic will maintain sufficient resources to perform the Research Activities for which it is responsible under this Agreement in accordance herewith; and

(g) Morphic will not, and will so cause its Affiliates not to, directly or indirectly, sue, assert any claim or counterclaim against, or otherwise participate in any action or proceeding against Janssen or its Affiliates or their respective sublicensees in any case involving the Exploitation of any product (other than any Product) that claims or otherwise asserts that Janssen or its Affiliates or their respective sublicensees is or are liable for infringing any Morphic Platform and Product Patents made, conceived, discovered or otherwise generated by Janssen, its Affiliates or its agents (whether solely or jointly with Morphic, its Affiliates or its agents) in the performance of activities under this Agreement (the "**Covenant Patents**"). Janssen and each of its Affiliates and their respective sublicensees that is not party to this Agreement is a third party beneficiary of this Section 13.1.3(g). If Morphic or any of its Affiliates sells, assigns, exclusively licenses, transfers or otherwise grants any right under any Covenant Patent to a Third Party, then Morphic or such Affiliate, as applicable, will require such purchaser, assignee, licensee or transferee to agree in writing to be bound by the same covenant to the same extent as made by Morphic and its Affiliates in this Section 13.1.3(g).

13.2. **Disclaimers**.

13.2.1. **DISCLAIMER OF WARRANTIES**. EXCEPT AS OTHERWISE EXPRESSLY SET FORTH HEREIN, NEITHER PARTY MAKES ANY

REPRESENTATION OR EXTENDS ANY WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN PARTICULAR, JANSSEN DOES NOT MAKE ANY REPRESENTATION OR EXTEND ANY WARRANTY THAT THE COMPOUNDS OR PRODUCTS WILL BE SUCCESSFULLY DEVELOPED OR COMMERCIALIZED.

13.2.2. **LIMITATION OF LIABILITY**. EXCEPT FOR DAMAGES RESULTING FROM BREACHES OF SECTION 2.13 (EXCLUSIVITY), ARTICLE 12 (CONFIDENTIALITY), OR ANY REPRESENTATIONS OR WARRANTIES CONTAINED IN SECTION 13.1.2(b) (MORPHIC REPRESENTATION AND WARRANTIES AS OF THE EFFECTIVE DATE), OR INDEMNIFIABLE CLAIMS UNDER SECTION 13.3 (INDEMNIFICATION), IN NO EVENT WILL EITHER PARTY HAVE ANY CLAIMS AGAINST OR LIABILITY TO THE OTHER PARTY WITH RESPECT TO ANY INDIRECT, PUNITIVE, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING ANY CLAIMS FOR LOST PROFITS OR REVENUES) ARISING UNDER OR IN CONNECTION WITH THIS AGREEMENT UNDER ANY THEORY OF LIABILITY, EVEN IF SUCH PARTY HAS BEEN INFORMED OR SHOULD HAVE KNOWN OF THE POSSIBILITY OF SUCH DAMAGES.

13.3. **Indemnification**.

13.3.1. **Indemnification by Morphic**. Morphic will indemnify, defend and hold harmless Janssen and its Affiliates, and their respective directors, officers, employees and agents (each, a "**Janssen Indemnitee**"), against any and all liabilities, losses, damages and expenses (including reasonable attorneys' fees and expenses) (collectively, "**Liabilities**") made by a Third Party (a "**Third Party Claim**") to the extent arising from or relating to, directly or indirectly:

(a) the gross negligence, recklessness or wrongful intentional acts or omissions of Morphic in the course of performing activities under this Agreement;

(b) the breach by Morphic of any warranty, representation or covenant of Morphic under this Agreement;

(c) any claim that the practice of the Morphic Platform or the performance of the Morphic Research Activities, in each case, as set forth in the applicable Research Plan infringes, misappropriates or otherwise violates any Intellectual Property owned or possessed by any Third Party; or

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

(d) any claims of any nature arising out of (i) any Exploitation of any Compound or Product by or on behalf of Morphic prior to the Effective Date or after the effective date of termination of this Agreement, or (ii) any Morphic Research Activities performed by or on behalf of Morphic (excluding those Morphic Research Activities performed by or on behalf Janssen).

Morphic's indemnification obligations pursuant to this Section 13.3.1 (Indemnification by Morphic) will not apply to the extent that the applicable Liabilities arise directly or indirectly from the negligence, recklessness or wrongful intentional acts or omissions of any Janssen Indemnitee or the breach by Janssen of any warranty, representation or covenant made by Janssen in this Agreement.

13.3.2. **Indemnification by Janssen**. Janssen will indemnify, defend and hold harmless Morphic and its Affiliates, and their respective directors, officers, employees and agents (each, a "**Morphic Indemnitee**"), against any Third Party Claim to the extent arising from:

(a) the gross negligence, recklessness or wrongful intentional acts or omissions of Janssen in the course of performing activities under this Agreement;

(b) the breach by Janssen of any warranty, representation or covenant of Janssen under this Agreement;

(c) any claims of any nature arising out of the Exploitation of any Compound or Product by or on behalf of Janssen (other than by any Morphic Indemnitee), other than claims for which Morphic is required to indemnify Janssen pursuant to Section 13.3.1 (Indemnification by Morphic); or

(d) except for any claims with respect to which Morphic is required to indemnify any Janssen Indemnitee pursuant to Section 13.3.1(c), any claims of any nature arising out of (i) any Exploitation of any Product by or on behalf of Janssen after the effective date of termination of this Agreement, or (ii) any Research Activities performed by or on behalf of Janssen.

Janssen's indemnification obligations pursuant to this Section 13.3.2 (Indemnification by Janssen) will not apply to the extent that the applicable Liabilities arise directly or indirectly from the negligence, recklessness or wrongful intentional acts or omissions of any Morphic Indemnitee or the breach by Morphic of any warranty, representation or covenant made by Morphic in this Agreement.

13.3.3. **Procedure**. If a Party (the "**Indemnitee**") intends to claim indemnification under this Section 13.3 (Indemnification), it will promptly notify the other Party (the "**Indemnitor**") in writing of any Third Party Claim for which the Indemnitee intends to seek such indemnification. The failure of the Indemnitee to deliver written notice to the Indemnitor within a reasonable time after the commencement of any such action will only relieve the Indemnitor of any obligation to the Indemnitee under this Section with respect to any such action to the extent such failure prejudices the Indemnitor's ability to defend a Third Party Claim. The Indemnitee will permit the Indemnitor to control the litigation or settlement of such Third Party Claim and cooperate fully with Indemnitor in all related matters, *provided* that unless agreed by Indemnitee (a) counsel appointed by Indemnitor to defend Indemnitee will not take any position that if sustained would cause Indemnitee not to be indemnified by Indemnitor and (b) no settlement will involve any terms binding on Indemnitee except payment of money to by paid by Indemnitor.

13.4. **Insurance**. Morphic will procure and maintain general liability and product liability insurance during the Term of this Agreement and for at least [***] thereafter in an aggregate coverage amount of [***]. Janssen will be named or included as an additional insured under Morphic's general liability and product liability insurance policy. Such insurance will not be construed to create a limit of Morphic's liability with respect to its indemnification obligations under Section 13.3 (Indemnification). Morphic will provide Janssen with written evidence of such insurance upon request and will provide Janssen with written notice at least [***] prior to the cancellation, non-renewal or material change in such insurance that materially adversely affects the rights of Janssen hereunder.

13.5. **Healthcare Compliance**.

13.5.1. **Anti-Kickback and Stark Compliance**. Morphic will comply with Applicable Law, including the federal anti-kickback statute (42 U.S.C. § 1320a-7b), the related safe harbor regulations, and the Limitation on Certain Physician Referrals, also referred to as the "Stark Law" (42 U.S.C. § 1395nn) in connection with its activities under this Agreement. Accordingly, no part of any consideration paid hereunder is a prohibited payment for the recommending or arranging for the referral of business or the ordering of items or services; nor are the payments intended to induce illegal referrals of business.

13.5.2. **Exclusion from Federal Health Care Programs**. Morphic will conduct activities pursuant to this Agreement in accordance with Applicable Law and any applicable regulations regarding Medicare, Medicaid, and other third party-payer programs, if any. Morphic will not (a) become excluded from, and will not be convicted of any crime or engaged in any conduct that could result in exclusion from, participation in any state or federal

healthcare program, as defined in 42 U.S.C. §1320a-7b(f), for the provision of items or services for which payment may be made by a federal healthcare program and (b) contract with any employee, contractor, agent or vendor to perform work under this Agreement who is excluded from participation in any state or federal healthcare program. Morphic will notify Janssen of any final adverse action, discovery of contract with an excluded entity or individual, or exclusion within thirty (30) days of such action and will terminate any such contract effective immediately.

13.5.3. **No Debarred Individuals**. Morphic will not engage, in any capacity in connection with this Agreement, any person who has been debarred by FDA, is the subject of a conviction described in 21 U.S.C. 335a, or is subject to any similar sanction. Morphic will promptly inform Janssen in writing if it or any person performing activities under this Agreement is debarred or is the subject of a conviction described in 21 U.S.C. 335a, or if any action, suit, claim, investigation, or legal or administrative proceeding is pending or threatened relating to the debarment of conviction of Morphic or any such person performing activities in connection with this Agreement. Upon written request from Janssen, Morphic will, within ten (10) days, provide written confirmation that it has complied with the foregoing obligation.

13.5.4. **Anti-Corruption Laws**. Neither Morphic nor any of its Affiliates will perform any actions in connection with this Agreement that are prohibited by local and other anti-corruption laws (collectively "**Anti-Corruption Laws**") that may be applicable to Morphic. Without limiting the foregoing, neither Morphic nor any of its Affiliates will make any payments, or offer or transfer anything of value, to any government official or government employee, to any political party official or candidate for political office or to any other Third Party related to the transactions contemplated by this Agreement in a manner that would violate Anti-Corruption Laws.

14. TERM AND TERMINATION.

14.1. **Term**. This Agreement is effective as of the Effective Date and unless terminated earlier, will continue in effect on a Research Program-by-Research Program basis until either (a) the date of expiration of the Option Period for a Research Program (if Janssen does not exercise an Option for such Research Program) or (b) if Janssen does exercise an Option for a Research Program, the date on which the Royalty Term has expired in each country in the Territory for all Products that are the subject of such Research Program, and will finally expire upon the expiration of the Royalty Term for the final Product (the "**Term**"). Notwithstanding the foregoing, if Janssen has not exercised an Option for at least one Research Program before the expiration of the last to expire Option Period for the final Research Program, then the Term will expire upon the expiration of the last to

expire Option Period. Upon expiration of the Royalty Term for a Product in a country that is the subject of any Research Program for which Janssen has exercised an Option in accordance with Section 3.2 (Option Exercise), the licenses granted from Morphic to Janssen under this Agreement with respect to such Product in such country will become fully-paid, irrevocable and perpetual.

14.2. **Termination by Janssen for Convenience**. Janssen may terminate this Agreement in its entirety or on a Research Program-by-Research Program or country-by-country basis at any time and in its sole discretion upon sixty (60) days' advance written notice to Morphic.

14.3. **Termination for Material Breach**.

14.3.1. **Right to Terminate for Material Breach**.

(a) **Termination by Morphic**. Subject to Section 14.3.2 (Disputed Breach), on a Research Program-by-Research Program basis Morphic may terminate this Agreement with respect to a Research Program upon delivery of written notice to Janssen in the event of any material breach of this Agreement by Janssen with respect to such Research Program, *provided* that such termination will not be effective if such breach has been cured within [***] after written notice thereof is given by Morphic to Janssen specifying the nature of the alleged breach (or, if such default cannot be cured within such first [***] period, such termination will not be effective if such breach has been cured within [***] after such notice if Janssen commences actions to cure such default within such [***] period and thereafter diligently continues such actions).

(b) **Termination by Janssen**. Subject to Section 14.3.2 (Disputed Breach), on a Research Program-by-Research Program basis Janssen may terminate this Agreement with respect to a particular Research Program upon delivery of written notice to Morphic in the event of any material breach of this Agreement by Morphic with respect to such Research Program, *provided* that such termination will not be effective if such breach has been cured within [***] after written notice thereof is given by Janssen to Morphic specifying the nature of the alleged breach (or, if such default cannot be cured within such first [***] period, such termination will not be effective if such breach has been cured within [***] after such notice if Morphic commences actions to cure such default within such [***] period and thereafter diligently continues such actions).

14.3.2. **Disputed Breach**. If the allegedly breaching Party disputes in good faith the existence, materiality, or cure of the applicable material breach and provides written notice of such dispute to the other Party within the

applicable period set forth above in Section 14.3.1 (Right to Terminate for Material Breach), then the matter will be addressed under the dispute resolution provisions in Section 15.1 (Discussion by Executive Officers; Arbitration), and the termination will not become effective unless and until it has been determined under Section 15.1 (Discussion by Executive Officers; Arbitration) that the allegedly breaching Party is in material breach of any of its obligations under this Agreement and has failed to cure the same. During the pendency of such a dispute, all of the terms and conditions of this Agreement will remain in effect and the Parties will continue to perform all of their respective obligations hereunder.

14.4. **Termination for Failure to Determine to Commence Late Lead Optimization Activities**. If, within [***] following completion of Lead Optimization Activities for a given Research Program, Janssen does not (a) provide written notice to the JRC indicating that it will commence Late Lead Optimization Activities and (b) commence Late Lead Optimization Activities for such Research Program, then, unless otherwise agreed by the Parties in writing, this Agreement will terminate with respect to such Research Program on the date that is [***] after the completion of Lead Optimization Activities for such Research Program.

14.5. **Rights in Bankruptcy**.

14.5.1. **Termination Rights**. Either Party may, but is not required to, terminate this Agreement if, at any time, (a) the other Party files in any court or agency pursuant to any statute or regulation of any state, country or jurisdiction, a petition in bankruptcy or insolvency, for reorganization, for an arrangement, or for the appointment of a receiver or trustee of that Party or of its assets, (b) the other Party proposes a written Agreement of composition or extension of its debts, (c) the other Party is served with an involuntary petition against it, filed in any insolvency proceeding, and such petition will not be dismissed within sixty (60) days after the filing thereof, (d) the other Party proposes or is a Party to any dissolution or liquidation or (e) the other Party makes an assignment for the benefit of its creditors.

14.5.2. **Rights in Bankruptcy**. All rights and licenses granted under or pursuant to this Agreement by one Party to the other are, and will otherwise be deemed to be, for all purposes of Section 365(n) of Title 11 of the U.S. Bankruptcy Code ("**Title 11**"), licenses of rights to "intellectual property" as defined in Section 101 of Title 11. Each Party agrees that the other Party, as a licensee of intellectual property under this Agreement, will retain and may fully exercise all of its rights and elections under the U.S. Bankruptcy Code. In the event that a case under Title 11 is commenced by or against either Party (the "**Bankrupt Party**"), the other Party will have all of the rights set forth in Section 365(n) of Title 11 to the maximum extent permitted thereby. Without limiting the Party's rights under Section 365(n) of Title 11, if a case under Title 11 is commenced by or against the

Bankrupt Party, the Parties further agree that, in the event of a rejection of this Agreement by either Party (for purposes of this Section 14.5.2 (Rights in Bankruptcy), the "**licensor**") in any bankruptcy proceeding by or against the licensor under the U.S. Bankruptcy Code, (a) the other Party (for purposes of this Section 14.5.2 (Rights in Bankruptcy), the "**licensee**") will be entitled to a complete duplicate of (or complete access to, as appropriate) any such intellectual property and all embodiments of such intellectual property, which, if not already in the licensee's possession, will be promptly delivered to it upon the licensee's written request therefor and (b) Morphic will not interfere with Janssen's rights to intellectual property and all embodiments of intellectual property, and will assist and not interfere with Janssen in obtaining intellectual property and all embodiments of intellectual property from another entity. The term "embodiments" of intellectual property includes all tangible, intangible, electronic or other embodiments of rights and licenses hereunder, including all compounds and products embodying intellectual property, Compounds, Products, regulatory filings and related rights, and technology. All rights of the Parties under this Section 14.5.2 (Rights in Bankruptcy) and under Section 365(n) of Title 11 are in addition to and not in substitution of any and all other rights, powers and remedies that each Party may have under this Agreement, Title 11 and any other Applicable Law.

14.6. **Effects of Termination**.

14.6.1. **Generally**. Upon termination of this Agreement with respect to any Terminated Program or in its entirety:

(a) The Receiving Party will promptly return to the other Party or destroy all Confidential Information of the Disclosing Party that is solely related to any applicable Terminated Program; and

(b) Except as otherwise set forth in this Agreement (including the license granted in Section 7.2.2 (Non-Exclusive License Grant to Morphic)), all licenses granted by a Party to the other Party under this Agreement with respect to any applicable Terminated Program will immediately terminate.

14.6.2. **Reversion; Financial Commitments**. Upon termination of this Agreement with respect to any Terminated Program or in its entirety (A) by Janssen pursuant to Section 14.2 (Termination by Janssen for Convenience) or (B) by Morphic pursuant to Section 14.3.1(a) (Termination by Morphic) in the event of an uncured material breach by Janssen or Section 14.4 (Rights in Bankruptcy) in the event of Janssen's insolvency:

(a) Janssen will, and hereby does, assign to Morphic all Assigned Product-Specific Patents and Janssen Patents, in each case, that (i) solely Cover any Licensed Compound or Product that is the subject of the applicable Terminated Program and do not Cover any Licensed Compound or Product that is the subject of any Research Program that is not a Terminated Program and (ii) Morphic previously assigned to Janssen pursuant to Section 9.2.2 (Morphic Assignment of Assigned Product-Specific Technology);

(b) Janssen will promptly transfer to Morphic copies of all Janssen Know-How that (i) is necessary or useful to Exploit the Licensed Compounds and Products that are the subject of the applicable Terminated Program in the form that such Licensed Compounds and Products exist as of the effective date of termination of this Agreement with respect to such Terminated Program and (ii) Morphic previously transferred to Janssen pursuant to Section 5.1.2 (After Option Exercise);

(c) Effective as of such termination, Janssen hereby grants and agrees to grant to Morphic a (i) non-exclusive, royalty-free (except as otherwise provided in Section 14.6.3 (Royalty for Terminated Janssen Products)), irrevocable, perpetual, worldwide license, with the right to sublicense through multiple tiers, under all such Janssen Know-How transferred to Morphic pursuant to Section 14.6.2(b), to Develop, make, have made, use, have used, sell, have sold, offer for sale, import and otherwise Exploit Licensed Compounds and Products that are the subject of the applicable Terminated Program, in the form that such Licensed Compounds and Products exist as of the effective date of termination of this Agreement with respect to such Terminated Program and (ii) a non-exclusive, royalty-free, irrevocable, perpetual, worldwide license, with the right to sublicense through multiple tiers, under the Retained Janssen Patents to Develop, make, have made, use, have used, sell, have sold, offer for sale, import and otherwise Exploit Licensed Compounds and Products that are the subject of the applicable Terminated Program, in the form that such Licensed Compounds and Products exist as of the applicable effective date of termination of this Agreement with respect to such Terminated Program; and

(d) Janssen will pay Morphic the amount of any financial commitments incurred by Morphic prior to termination in accordance with the Research Budget for the applicable Terminated Program that exceed amounts paid by Janssen to Morphic hereunder prior to such termination and cannot be canceled; *provided* that Janssen will only be responsible for paying FTE Costs (as pro-rated in accordance with the applicable Research Budget for such Terminated Program)

and Out-of-Pocket Costs until [***] after the effective date of such termination. Upon receipt of notice of termination of this Agreement with respect to a Terminated Program, Morphic will promptly terminate any outstanding commitments and avoid incurring any further costs under the applicable Research Plan for such Terminated Program. No later than [***] after the effective date of termination or expiration of this Agreement or the applicable Terminated Program, unless another period is agreed to in writing by the Parties, Morphic may provide an invoice in respect of the final payment due and payable pursuant to the Research Budget for the applicable Terminated Program(s) in accordance with this Section 14.6.2(d). Janssen will pay all such amounts in accordance with the invoicing and payment provisions of Section 8.11 (Invoicing and Payment). Notwithstanding anything to the contrary set forth in this Agreement, it is understood that, in no event will the funds payable to Morphic exceed the Research Budget and then-applicable Allowable Overruns for the Terminated Program. In addition, within [***] days after such effective date of termination, Morphic will provide Janssen with a final accounting for the applicable Research Budget(s). If the final accounting indicates an amount is due to Morphic, then Janssen will make such final payment in accordance with the invoicing and payment provisions of Section 8.11 (Invoicing and Payment). If the final accounting indicates an overpayment by Janssen, then Morphic will refund such overpayment to Janssen within [***] of the final accounting.

14.6.3. **Royalty for Terminated Janssen Products**. Upon termination of this Agreement with respect to any Terminated Program or in its entirety by Janssen pursuant to Section 14.2 (Termination by Janssen for Convenience), if, as of the date of such termination with respect to such Terminated Program, Janssen has dosed all patients in a POC Clinical Trial for any Terminated Janssen Product that is the subject of the applicable Terminated Program, then on a Terminated Janssen Product-by-Terminated Janssen Product and country-by-country basis (with respect to such Terminated Program), for so long as Morphic or its Affiliates or licensees sell such Terminated Janssen Product, Morphic will pay Janssen royalties in the amount equal to [***] of the marginal royalty rates set forth in TABLE 8.7 (Royalty Payments) of the aggregate worldwide Net Sales resulting from the sale of each such Terminated Janssen Product during each Calendar Year for each Terminated Janssen Product in each country. For the purposes of this Section 14.6.3 (Royalty for Terminated Janssen Products), the definition of "Net Sales" and Section 8.7 (Royalties), Section 8.11.2 (Other Payments), Section 8.12 (Reports), Section 8.13.2 (Audit of Janssen), Section 8.14 (Conduct of Audits), Section 8.15 (Currency Exchange) and Section 8.16 (Taxes) will apply *mutatis mutandis* to the calculation, payment, recording and

auditing of Morphic's obligations to pay royalties under this Section 14.6.3 (Reverse Royalty for Terminated Janssen Products) as they apply to Janssen and, solely for such purpose, each reference in each such Section (and any related definitions) to (i) Janssen will be deemed to be a reference of Morphic and (ii) Morphic will be deemed to be a reference of Janssen.

14.7. **Alternative Remedy in Lieu of Termination**. If Janssen has the right to terminate this Agreement pursuant to Section 14.3.1(b) (Termination by Janssen), then in addition to any other remedies available to Janssen at law or in equity, in lieu of terminating this Agreement Janssen may, in its sole discretion, exercise an alternative remedy as follows:

(a) Janssen may retain all of its licenses and other rights granted under this Agreement with respect to the applicable Terminated Program, subject to all of its payment and other obligations hereunder; except that (i) the then-unearned Milestone Payments and the royalty rates payable thereafter under this Agreement with respect to such Terminated Program and Products that are the subject of such Terminated Program, in each case, will be reduced by [***] and (ii) Janssen's obligations under Section 5.5 (Development Diligence Obligations) and Section 5.6 (Commercialization Diligence Obligations) will each terminate with respect to the Terminated Program; and

(b) any Janssen Confidential Information provided to Morphic pursuant to this Agreement related to such Terminated Program will be promptly returned to Janssen or destroyed and Janssen will be released from its ongoing disclosure and information exchange obligations with respect to activities related to such Terminated Program that are performed following the date of such election.

For the avoidance of doubt, except as set forth in this Section 14.7 (Alternate Remedy in Lieu of Termination), if Janssen exercises the alternative remedy set forth above in this Section 14.7 (Alternate Remedy in Lieu of Termination) with respect to a Terminated Program, then all rights and obligations of both Parties under this Agreement with respect to such Terminated Program will continue unaffected, unless and until this Agreement is subsequently terminated by either Party pursuant to this ARTICLE 14 (Term and Termination).

14.8. **Accrued Rights**. Expiration or termination of this Agreement (or any provision hereof) for any reason will be without prejudice to any right that has accrued to the benefit of a Party prior to such expiration or termination, including damages arising from any breach under this Agreement. Subject to Section 14.6.2(d), expiration or

termination of this Agreement will not relieve a Party from any obligation that is expressly indicated to survive such expiration or termination.

14.9. **Survival**. The following provisions, as well as any other provisions which by their nature are intended to survive termination or expiration, will survive termination or expiration of this Agreement: Article 1 (Definitions), Section 2.10 (Research Program Records), Section 7.2.2 (Non-Exclusive License Grant to Morphic), Section 7.2.3 (Residual Memory and Firewall), Section 7.2.5 (Sublicense Continuation upon Termination), Section 8.7 (Royalties) (solely with respect to Terminated Janssen Products), Section 8.11.2 (Invoicing and Payment) (solely with respect to Terminated Janssen Products), Section 8.12 (Reports) (solely with respect to Terminated Janssen Products), Section 8.13 (Records and Audits), Section 8.14 (Conduct of Audits), Section 8.15 (Currency Exchange) (solely with respect to Terminated Janssen Products), Section 8.16 (solely with respect to Terminated Janssen Products), Section 9.1 (Ownership), Section 9.2 (Assignment of Intellectual Property), Section 9.3 (Exploitation of Joint Technology), Section 9.4 (Disclosure) (solely with respect to Joint Technology), Section 10.6 (Cooperation) (solely with respect to Joint Patents), Section 11.6 (Patent Term Restoration) (solely with respect to Joint Patents), Article 12 (Confidentiality), Section 13.2 (Disclaimers), Section 13.3 (Indemnification), Section 13.4 (Insurance), Section 14.1 (Term) (solely in case of expiration), Section 14.6 (Effects of Termination) (together with those Sections referenced therein), Section 14.8 (Accrued Rights), this Section 14.9 (Survival), Article 15 (Dispute Resolution) and Article 16 (General Provisions).

15. DISPUTE RESOLUTION.

15.1. **Discussion by Executive Officers; Arbitration**. If there is an unresolved matter, dispute or issue arising out of or relating to the existence, negotiation, validity, formation, interpretation, breach, performance or application of this Agreement for which neither Party has the final decision making authority as expressly provided elsewhere in this Agreement, then either Party may refer such matter, dispute or issue to the Executive Officers of each Party, in writing for further discussion and resolution. These individuals will meet as soon as practicable and attempt in good faith to resolve the matter, dispute or issue and reach an agreement. These individuals may obtain the advice of other employees or consultants as they deem necessary or advisable in order to make the decision. If these individuals cannot reach agreement as to the matter, dispute or issue within [***] of the matter, dispute or issue being referred to them, then any such matter, dispute or issue under this Agreement (an "**Unresolved Issue**") will be resolved as provided in **Schedule 15.1** (Dispute Resolution).

16. GENERAL PROVISIONS.

16.1. **Relationship of Parties**. Both Parties are independent contractors under this Agreement. Nothing herein contained is deemed to create an employment,

agency, joint venture or partnership relationship between the Parties hereto or any of their agents or employees, or any other legal arrangement that would impose liability upon one Party for the act or failure to act on behalf of the other Party. Neither Party will have any express or implied power or authority to enter into any contracts or commitments or to incur any liabilities in the name of, or on behalf of, the other Party, or to bind the other Party in any respect whatsoever.

16.2. **Performance by Affiliates**. Notwithstanding anything to the contrary set forth in this Agreement, either Party may perform any or all of its obligations and exercise any or all of its rights under this Agreement through any Affiliate. Each Party will cause its Affiliates to comply with the provisions of this Agreement in connection with such performance.

16.3. **No Third-Party Beneficiaries**. No provision of this Agreement may be deemed or construed in any way to result in the creation of any rights in any person not a Party to this Agreement.

16.4. **Compliance with Laws**. Each Party will perform or cause to be performed any and all of its obligations or the exercise of any and all of its rights hereunder in good scientific manner and in compliance with all Applicable Law, including the U.S. Foreign Corrupt Practices Act and all other Anti-Corruption Laws.

16.5. **Governing Law**. This Agreement is governed by, and construed and enforced in accordance with, the laws of New York, without giving effect to any conflicts of laws principles that might otherwise refer construction or interpretation of this Agreement to the substantive law of another jurisdiction.

16.6. **Counterparts; Facsimiles**. This Agreement may be executed in two (2) counterparts, each of which is deemed an original, and both of which together are deemed to be one and the same instrument. Counterparts may be delivered via electronic mail, including Adobe™ Portable Document Format (PDF) or any electronic signature complying with the U.S. Federal ESIGN Act of 2000, and any counterpart so delivered will be deemed to be original signatures, will be valid and binding upon the Parties, and, upon delivery, will constitute due execution of this Agreement.

16.7. **Headings**. All headings in this Agreement are for convenience only and do not affect the meaning of any provision hereof.

16.8. **Assignment**. Neither this Agreement nor any interest hereunder will be assignable by Morphic without the prior written consent of Janssen, except as follows: (a) Morphic may, subject to the terms of this Agreement, assign its rights and obligations under this Agreement in whole to its successor-in-interest in connection with the sale of all or substantially all of its assets to which this Agreement relates, whether in a merger, acquisition, or similar transaction or series of related transactions, *provided* that such sale is not primarily for the benefit

of its creditors and (b) Morphic may assign its rights and obligations under this Agreement to any of its Affiliates, *provided* that Morphic will remain liable for all of its rights and obligations under this Agreement. Janssen may freely assign this Agreement or any interest hereunder in whole or in part, *provided* that Janssen will remain liable for all of its rights and obligations under this Agreement. Morphic will promptly notify Janssen of any assignment or transfer under the provisions of this Section 16.8 (Assignment). This Agreement will be binding upon the successors and permitted assigns of the Parties and the name of a Party appearing herein will be deemed to include the names of such Party's successors and permitted assigns to the extent necessary to carry out the intent of this Agreement. Any assignment not in accordance with this Section 16.8 (Assignment) will be null, void, and of no legal effect.

16.9. **Non-Solicitation**. [***]

16.10. **Notices**. All notices that are required or permitted hereunder will be in writing and sufficient if delivered personally, sent by facsimile or electronic mail (and promptly confirmed by personal delivery, registered or certified mail or overnight courier), sent by nationally-recognized overnight courier or sent by registered or certified mail, postage prepaid, return receipt requested, addressed as follows:

If to Morphic:

Morphic Therapeutic, Inc.
35 Gatehouse Drive A2
Waltham, MA 02451
Attention: Chief Executive Officer

With a copy to (which will not constitute notice):

Dechert LLP
1900 K Street, NW
Washington, DC 20006
Attention: David E. Schulman
Facsimile: [***]

If to Janssen:

Janssen Pharmaceuticals, Inc.
1125 Trenton-Harbourton Road
Titusville, NJ 08560
Attention: President

With a copy to:

Johnson & Johnson
One Johnson & Johnson Plaza
New Brunswick, NJ 08933
Attention: Chief Patent Counsel
Facsimile: [***]

With a copy to (which will not constitute notice):

Ropes & Gray LLP
800 Boylston Street, Prudential Tower
Boston, MA 02199
Attention: David M. McIntosh
Facsimile: [***]

Either Party may change its designated address and facsimile number by notice to the other Party in the manner provided in this Section 16.10 (Notices).

16.11. **Amendment**. This Agreement may be amended, supplemented or otherwise modified only by means of a written instrument signed by a duly authorized officer of both Parties.

16.12. **Waiver**. No provision of this Agreement may be waived by any act, omission or knowledge of a Party or its agents or employees except by a written instrument expressly waiving such provision and signed by a duly authorized officer of the waiving Party. The waiver by either of the Parties of any breach of any provision hereof by the other Party will not be construed to be a waiver of any succeeding breach of such provision or a waiver of the provision itself.

16.13. **Severability**. In the event that any provision of this Agreement is, for any reason, held to be invalid or unenforceable in any respect, such invalidity or unenforceability will not affect any other provision hereof, and the Parties will negotiate in good faith to modify the Agreement to preserve (to the extent possible) their original intent.

16.14. **Construction**. Except where the context expressly requires otherwise, (a) the use of any gender herein will be deemed to encompass references to either or both genders, and the use of the singular will be deemed to include the plural (and vice versa), (b) the words “include,” “includes,” and “including” will be deemed to be followed by the phrase “without limitation,” (c) the word “will” will be construed to have the same meaning and effect as the word “shall,” (d) any definition of or reference to any agreement, instrument, or other document herein will be construed as referring to such agreement, instrument, or other document as from time to time amended, supplemented, or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein), (e) any reference herein to any person will be construed to include the person’s successors and assigns, (f) the words “herein,” “hereof,” and “hereunder” and words of similar import, will each be construed to refer to this Agreement in its entirety and not to any particular provision hereof, (g) all references herein to Articles, Sections, or Schedules will be construed to refer to Articles, Sections, or Schedules of this Agreement, and references to this Agreement include all Schedules hereto, (h) the word “notice” means notice in writing (whether or not specifically stated) and will include notices, consents, approvals and other written communications contemplated under this Agreement, (i) provisions that require

that a Party, the Parties or any committee hereunder "agree," "consent," "approve," or the like will require that such agreement, consent, or approval be specific and in writing, whether by written agreement, letter, approved minutes, or otherwise (but excluding e-mail and instant messaging), (j) references to any specific law, rule or regulation, or section or other division thereof, will be deemed to include the then-current amendments thereto or any replacement or successor law, rule or regulation thereof and (k) the term "or" will be interpreted in the inclusive sense commonly associated with the term "and/or."

16.15. **Entire Agreement**. This Agreement, including the attached Schedules, is the sole agreement with respect to the subject matter and supersedes all other agreements, prior discussions, representations, and understandings between the Parties with respect to same. For the avoidance of doubt, this Agreement supersedes that certain "Confidential Disclosure Agreement" between Morphic and an Affiliate of Janssen dated March 2, 2017, *provided* that all "Confidential Information" disclosed or received by Morphic and such Affiliate of Janssen thereunder is deemed "Confidential Information" hereunder and subject to the terms and conditions of this Agreement.

16.16. **Acknowledgement**. Morphic acknowledges and agrees that Janssen and its Affiliates may have been involved prior to the Effective Date and may be involved during the Term in Developing, Commercializing, Manufacturing or otherwise Exploiting products that may compete with the Products, and nothing in this Agreement will restrict or prohibit Janssen or any of its Affiliates from Developing, Commercializing, Manufacturing or otherwise Exploiting any such competitive products during the Term or thereafter.

16.17. **Force Majeure**. Neither Janssen nor Morphic will be liable for failure of or delay in performing obligations set forth in this Agreement (other than any obligation to pay monies when due), and neither will be deemed in breach of such obligations, if such failure or delay is due to natural disasters or any causes reasonably beyond the control of Janssen or Morphic; *provided* that the Party affected will promptly notify the other of the force majeure condition and will exert reasonable efforts to eliminate, cure or overcome any such causes and to resume performance of its obligations with reasonable dispatch when such causes are removed.

16.18. **Further Actions**. Each Party agrees to execute, acknowledge and deliver such further instruments, and to do all such other acts, as may be necessary or appropriate in order to carry out the purposes and intent of the Agreement, including the filing of additional assignments, agreements, documents and instruments, as the other Party may at any time and from time to time reasonably request in connection with this Agreement or to carry out more effectively the provisions and purposes of, or to better assure and confirm unto such other Party its rights and remedies under, this Agreement.

[Signature Page Follows]

The Parties have caused this Research Collaboration and Option Agreement to be executed by their respective duly authorized officers as of the Effective Date.

MORPHIC THERAPEUTIC, INC.		**JANSSEN PHARMACEUTICALS, INC.**	
Signature:	/s/ Praveen P. Tipirneni	Signature:	/s/ Peter Menziuso
Name:	Praveen P. Tipirneni	Name:	Peter Menziuso
Title:	President and CEO	Title:	President

SCHEDULE 1.18

[***]

SCHEDULE 1.182

Threshold Activity and Selectivity

[***]

SCHEDULE 1.91

Late Lead Optimization Activities

Janssen Late Lead Optimization Activities will evaluate and optimize the following properties of the Compounds

[***]

[***] · [***]

[***]

[***] · [***]

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SCHEDULE 1.108

Morphic Patents as of the Effective Date

A. Product-Specific Patents

[***]

B. Morphic Platform Patents

[***]

SCHEDULE 2.2.1(a)

[***]

SCHEDULE 2.2.1(b)

[***]

SCHEDULE 2.2.1(c)

[***]

SCHEDULE 2.2.3

2019 Research Plan and Research Budget

SCHEDULE 2.10

Data Integrity Requirements

1. Morphic represents, warrants, covenants and certifies that the Data will be collected and generated following the specifications contained in this Agreement, all written instructions provided by Janssen, and all applicable good research practices.

2. Data will be accurate, reliable and all results generated during the performance of services will be reconstructable, repeatable and traceable. Morphic must verify the Data during generation and prior to transfer of the Data to Janssen.

3. Morphic must keep a separate written or electronic notebook record of all activity associated with the performance of services under this Agreement. Such records must document all data processing steps, including detailed notes of calculations applied, reasoning used for excluded data points and any decisions made in furtherance of the services, to allow for complete and transparent reporting of activities conducted in the performance of services under this Agreement.

4. Morphic will collect and store hard copy as well as electronic Data securely in accordance with the terms of this Agreement, including in accordance with Janssen policies related to records management.

5. Morphic must report all Data and its processing steps, decision-points, acceptance criteria, methods, calculations and results (successful and unsuccessful experiments) to Janssen at mutually agreed upon points in time.

6. All Data generated must be made available either as an original or as an electronic copy by Morphic to Janssen at mutually agreed upon time points or at the latest at the completion of the Research Activities under this Agreement. Data which were generated or modified in electronic format must be transferred to Janssen in electronic format.

7. No Data will be destroyed without the prior written approval of Janssen.

8. During and up to [***] after the completion of the Research Activities under this Agreement, Morphic will ensure that representatives of Janssen have access to Morphic's and its Affiliates' premises, upon reasonable advance notice during regular business hours, for the purpose of reviewing such activities and the Data related thereto, and the systems and processes which were used to generate and process the Data. In the event that Morphic is found responsible for quality or data integrity issues with the Data generated under this Agreement, Morphic will seek to resolve any issues by a mutually agreed upon date.

Definition*: For the purpose of this Schedule only, the terms listed below will have the meaning as defined below.*

Data means all data, including raw data, processed data, notebook records, documents, reports, presentations, computer models, deliverables, written, printed, graphic, video and audio recorded information contained in any computer database or computer readable form and other results supplied to or generated by or on behalf of Morphic or its Affiliates or Sublicensees as the result of performing activities under this Agreement.

SCHEDULE 10.1

Jurisdictions

[***]

SCHEDULE 12.4.1

Press Release

Morphic Therapeutic Enters Into Integrin Research and Development Collaboration with Janssen

- *Deal extends reach of Morphic discovery across all known human integrins*
- *Therapeutic potential of Morphic pipeline expanded by inclusion of both integrin inhibitor and activator research*
- *Collaboration facilitated by Johnson & Johnson Innovation, Boston*

WALTHAM, Mass. — February XX, 2019 — Morphic Therapeutic (Morphic), a biotechnology company developing oral integrin therapies, announced today that it has entered into a research and development collaboration with Janssen Biotech, Inc. (Janssen) to discover and develop novel integrin therapeutics for patients with conditions not adequately addressed by current therapies. Johnson & Johnson Innovation LLC facilitated the transaction. The collaboration focuses on several undisclosed integrin targets and will explore both inhibitors and activators of integrin function.

To date, Morphic has built a leadership position in novel oral small molecule integrin inhibitors by leveraging the breakthrough structural research of its scientific founder, Dr. Tim Springer. Applying this platform to all 24 known human integrins, including αI integrin targets, potentially expands Morphic's drug discovery capabilities, pipeline and the therapeutic applications of its drug candidates across a diverse set of diseases. This reflects integrins' important role in many cellular processes.

"Our team is pleased to have a partner of Janssen's caliber join our network of collaborators working together to drive the development of a new generation of oral integrin medicines using our in-house platform," said Praveen Tipirneni, M.D., president, and chief executive officer, Morphic Therapeutic. "The dysregulation of the diverse integrin family is implicated in many conditions, creating an urgency which drives our team's mission to rapidly and systematically interrogate this target class both from an inhibition and activation perspective. This partnership offers exciting opportunities to advance oral integrin development into new areas, research which creates value for all our internal programs and accelerates the refinement and validation of our platform."

Under the terms of the agreement, the companies will collaborate through preclinical development to identify and advance candidates. Upon completing Investigational New Drug enabling studies, Janssen may exclusively option the licensed compounds, and then Janssen will be responsible for global clinical development and commercialization. Janssen will pay Morphic an undisclosed upfront payment and will fund research activities. In addition, Morphic will receive from Janssen multiple preclinical development, clinical and commercial milestone payments totaling over $725 million if such milestones are achieved. Morphic will also receive royalties on worldwide net sales for any products resulting from the collaboration.

About Integrins

Integrins are a ubiquitous family of receptors expressed on the surface of most human cells. Integrins are dimers comprising one α (alpha) subunit and one β (beta) subunit. Integrin signaling controls a wide range of cellular processes, including cell survival, cell cycle progression, immune system activation, cell differentiation, and cell migration. Aberrant integrin signaling contributes to a diverse array of human diseases, including each of Morphic's focus areas of fibrosis, autoimmune diseases, and immuno-oncology.

αI (pronounced 'alpha-eye') domain integrins represent a distinct structural class of the 24-member integrin family. The presence of the αI domain in the α (alpha) subunit of the integrin dimer gives it a different mechanism of ligand binding. αI domain integrins are distinct from the α1 (alpha-one) subunit of the integrin dimer. Activators of integrin function may be useful in the treatment of diseases where cell function is weakened due to loss of integrin-mediated interactions with the microenvironment.

Research in the Springer laboratory has shown that, historically, compounds designed to inhibit integrin function inadvertently worked to activate it, leading to the failure of investigational oral integrin drugs. Morphic's platform is designed to avoid these pitfalls and deliver effective oral therapeutic candidates including both inhibitors and activators of integrin function.

About Morphic Therapeutic

Morphic Therapeutic is a biotechnology company developing a new generation of oral integrin therapies. Drawing on integrin biology breakthroughs from the lab of noted entrepreneur and scientific founder Tim Springer, Morphic has developed an exclusive platform to build on these discoveries to model integrins and discover effective orally delivered integrin therapies. For more information, visit www.morphictx.com.

Contacts

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781-996-0955

Morphic Media Contact
Tom Donovan, Ten Bridge Communications
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857-559-3397

SCHEDULE 15.1

Dispute Resolution

Arbitration

If a Party desires to pursue resolution of the Unresolved Issue, then the Unresolved Issue will be submitted by either Party for resolution in arbitration pursuant to the then current CPR *Non-Administered Arbitration Rules* ("**CPR Rules**") (http://www.cpradr.org), except where they conflict with these provisions, in which case these provisions control. The arbitration will be held in New York, New York. All aspects of the arbitration will be treated as confidential.

The arbitrators will be chosen from the CPR Panel of Distinguished Neutrals, unless a candidate not on such panel is approved by both parties. Except as provided below with respect to Unresolved Issues related to Section 3.7.4 (Passed Terminated Janssen Product Partnering), each arbitrator will be a lawyer with at least 15 years experience with a law firm or corporate law department of over 25 lawyers or who was a judge of a court of general jurisdiction. To the extent that the Unresolved Issue requires special expertise, the Parties will so inform CPR prior to the beginning of the selection process.

The arbitration tribunal will consist of three arbitrators, of whom each Party will designate one in accordance with the "screened" appointment procedure provided in CPR Rule 5.4. The chair will be chosen in accordance with CPR Rule 6.4.

If, however, (a) the aggregate award sought by the Parties is less than [***] and equitable relief is not sought, or (b) the Unresolved Issues involves Section 3.7.4 (Passed Terminated Janssen Product Partnering), a single arbitrator will be chosen in accordance with the CPR Rules (and, in the case of any dispute involving Section 3.7.4 (Passed Terminated Janssen Product Partnering), the arbitrator shall have at least ten (10) years of experience as a financial advisor or business development officer in the biopharmaceutical industry).

Candidates for the arbitrator position(s) may be interviewed by representatives of the Parties in advance of their selection, *provided* that all parties are represented.

The Parties agree to select the arbitrator(s) within [***] of initiation of the arbitration. The hearing will be concluded within [***] after selection of the arbitrator(s) and the award will be rendered within [***] of the conclusion of the hearing, or of any post-hearing briefing, which briefing will be completed by both sides [***] after the conclusion of the hearing. In the event the Parties cannot agree upon a schedule, then the arbitrator(s) will set the schedule following the time limits set forth above as closely as practical.

The hearing will be concluded in ten hearing days or less. Multiple hearing days will be scheduled consecutively to the greatest extent possible. A transcript of the testimony adduced at the hearing will be made and will be made available to each Party.

The arbitrator(s) will be guided, but not bound, by the *CPR Protocol on Disclosure of Documents and Presentation of Witnesses in Commercial Arbitration* (www.cpradr.org) ("**Protocol**"). The Parties will attempt to agree on modes of document disclosure, electronic discovery, witness presentation, etc. within the parameters of the Protocol. If the Parties cannot agree on discovery and presentation issues, then the arbitrator(s) will decide on presentation modes and provide for discovery within the Protocol, understanding that the parties contemplate reasonable discovery.

The arbitrator(s) will decide the merits of any Unresolved Issue in accordance with the law governing this Agreement, without application of any principle of conflict of laws that would result in reference to a different law. The arbitrator(s) may not apply principles such as "amiable compositeur" or "natural justice and equity."

The arbitrator(s) are expressly empowered to decide dispositive motions in advance of any hearing and will endeavor to decide such motions as would a United States District Court Judge sitting in the jurisdiction whose substantive law governs.

The arbitrator(s) will render a written opinion stating the reasons upon which the award is based. The Parties consent to the jurisdiction of the United States District Court for the district in which the arbitration is held for the enforcement of these provisions and the entry of judgment on any award rendered hereunder. Should such court for any reason lack jurisdiction, any court with jurisdiction may act in the same fashion.

Each Party has the right to seek from the appropriate court provisional remedies such as attachment, preliminary injunction, replevin, etc. to avoid irreparable harm, maintain the *status quo*, or preserve the subject matter of the Unresolved Issue. Rule 14 of the CPR Rules does not apply to this Agreement.

EACH PARTY HERETO WAIVES: (1) ITS RIGHT TO TRIAL OF ANY ISSUE BY JURY, (2) WITH THE EXCEPTION OF RELIEF MANDATED BY STATUTE, ANY CLAIM TO PUNITIVE, EXEMPLARY, MULTIPLIED, INDIRECT, CONSEQUENTIAL OR LOST PROFITS OR REVENUES DAMAGES AND (3) ANY CLAIM FOR ATTORNEY FEES, COSTS AND PREJUDGMENT INTEREST.

Exhibit 10.11

Execution Version

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

Collaboration and Option Agreement

Between

MORPHIC THERAPEUTIC, INC.

and

ABBVIE BIOTECHNOLOGY LTD

Dated as of October 16, 2018

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COLLABORATION AND OPTION AGREEMENT

This Collaboration and Option Agreement (this "**Agreement**") is made and entered into as of October 16, 2018, 2018 (the "**Execution Date**") by and between Morphic Therapeutic, Inc., a Delaware corporation ("**Morphic**") and AbbVie Biotechnology Ltd, a corporation organized under the laws of Bermuda having its principal place of business at Clarendon House, 2 Church Street, Hamilton HM11, Bermuda ("**AbbVie**"). Morphic and AbbVie are sometimes referred to herein individually as a "**Party**" and collectively as the "**Parties**."

RECITALS

WHEREAS, Morphic owns and controls certain intellectual property rights with respect to small molecule integrin inhibitors in the Territory (as defined below); and

WHEREAS, the Parties wish for Morphic to perform certain research activities with respect to such inhibitors; and

WHEREAS, Morphic wishes to grant to AbbVie, and AbbVie wishes to obtain, options to take exclusive licenses under such intellectual property rights to Exploit (as defined below) Licensed Products (as defined below) in the Territory, in accordance with the terms and conditions set forth below.

NOW, **THEREFORE**, in consideration of the premises and the mutual promises and conditions set forth herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, do hereby agree as follows:

ARTICLE 1
DEFINITIONS

Unless otherwise specifically provided herein, the following terms shall have the following meanings:

1.1. "**AbbVie**" has the meaning set forth in the preamble hereto.

1.2. "**AbbVie Indemnitees**" has the meaning set forth in Section 11.2.

1.3. "**AbbVie Patent**" has the meaning set forth in Section 8.3.3.

1.4. "**AbbVie Prosecuted Joint Patent**" has the meaning set forth in Section 8.3.2(b).

1.5. "**Acceptance Date**" means, (a) with respect to a Data Package, (i) if AbbVie does not request that such Data Package be updated with any missing information or data pursuant to Section 2.6.2 or Section 3.2.2(b), as applicable, the date AbbVie receives such

Data Package and (ii) if AbbVie requests that such Data Package be updated with any missing information or data pursuant to Section 2.6.2 or Section 3.2.2(b), as applicable, the date AbbVie receives such missing information or data and (b) with respect to the Development plan and budget as set forth in Section 5.7.3(c) for a Liver Fibrosis Product, (i) if Morphic does not request a meeting pursuant to Section 5.7.3(c) for such Liver Fibrosis Product, the date Morphic receives such Development plan and budget and (ii) if Morphic requests a meeting pursuant to Section 5.7.3(c), the date of such meeting.

1.6. "**Accounting Standards**" means, with respect to a Party or its Affiliates or its or their (sub)licensees, United States generally accepted accounting principles, consistently applied.

1.7. "**Acquirer IP**" has the meaning set forth in Section 13.3.2.

1.8. "**Acquiring Entities**" has the meaning set forth in Section 13.3.2.

1.9. "**Acquisition Party**" has the meaning set forth in Section 13.3.2.

1.10. "**Acquisition Transaction**" has the meaning set forth in Section 13.3.2.

1.11. "**ADR**" has the meaning set forth in Section 13.5.1.

1.12. "**Advancement Criteria**" means, with respect to a Research Product, the criteria set forth on **Schedule 1.12** for determining whether to advance such Research Product to IND Enabling Activities.

1.13. "**Affiliate**" means, with respect to a Person, any Person that, directly or indirectly, through one (1) or more intermediaries, controls, is controlled by or is under common control with such first Person at any time for so long as such Person controls, is controlled by or is under common control with such first Person. For purposes of this definition, "control" and, with correlative meanings, the terms "controlled by" and "under common control with" means: (a) the possession, directly or indirectly, of the power to direct the management or policies of a business entity, whether through the ownership of voting securities, by contract relating to voting rights or corporate governance or otherwise; or (b) the ownership, directly or indirectly, of more than fifty percent (50%) of the voting securities or other ownership interest of a business entity (or, with respect to a limited partnership or other similar entity, its general partner or controlling entity).

1.14. "**Agreement**" has the meaning set forth in the preamble hereto.

1.15. "**Agreement Data**" has the meaning set forth in Section 10.3.3.

1.16. "**Alliance Managers**" has the meaning set forth in Section 6.4.

1.17. "**Amount**" has the meaning set forth in Section 7.10.1.

1.18. "**Applicable Law**" means applicable laws, rules and regulations, including any rules, regulations, regulatory guidelines or other requirements of Regulatory Authorities, that may be in effect from time to time.

1.19. "**Auditor**" has the meaning set forth in Section 7.13.2.

1.20. "**Backup Research Product**" means, with respect to a Research Target, a Research Product Directed to such Research Target that meets the Advancement Criteria and is distinct from the Lead Research Product for such Research Target based on [***].

1.21. "**Board of Directors**" has the meaning set forth in the definition of "Change of Control".

1.22. "**Breaching Party**" has the meaning set forth in Section 12.2.1(a).

1.23. "**Business Day**" means a day other than a Saturday or Sunday or a day on which banking institutions in Chicago, Illinois or Boston, Massachusetts are permitted or required to be closed.

1.24. "**Calendar Quarter**" means each successive period of three (3) calendar months commencing on January 1, April 1, July 1 or October 1, except that the first Calendar Quarter of the Term shall commence on the Effective Date and end on the day immediately prior to the first to occur of January 1, April 1, July 1 and October 1 after the Effective Date and the last Calendar Quarter shall end on the last day of the Term.

1.25. "**Calendar Year**" means each successive period of twelve (12) calendar months commencing on January 1 and ending on December 31, except that the first Calendar Year of the Term shall commence on the Effective Date and end on December 31 of the year in which the Effective Date occurs and the last Calendar Year of the Term shall commence on January 1 of the year in which the Term ends and end on the last day of the Term.

1.26. [***]

1.27. "**Change of Control**" means, with respect to a Party, that any of the following occurs after the Execution Date:

1.27.1. any "person" or "group" (as such terms are defined below) (a) is or becomes the "beneficial owner" (as defined below, except that a "person" or "group" shall be deemed to have "beneficial ownership" of all shares of capital stock or other equity interests if such person or group has the right to acquire, whether such right is exercisable immediately or only after the passage of time), directly or indirectly, shares of capital stock or other interests (including partnership interests) of such Party (or, if applicable, a parent of such Party) then outstanding and normally entitled (without regard to the occurrence of any contingency) to vote in the election of the directors, managers or similar supervisory positions ("**Voting Stock**") of such Party (or, if applicable, a parent of such Party) representing fifty percent (50%) or more of the total voting power of all outstanding classes of Voting Stock of such Party (or, if applicable,

a parent of such Party) or (b) has the power, directly or indirectly, to elect a majority of the members of such Party's (or, if applicable, a parent of such Party) board of directors or similar governing body ("**Board of Directors**");

1.27.2. such Party (or, if applicable, a parent of such Party) enters into a merger, consolidation or similar transaction with another Person (whether or not such Party (or, if applicable, a parent of such Party) is the surviving entity) and as a result of such merger, consolidation or similar transaction (a) the members of the Board of Directors of such Party (or, if applicable, a parent of such Party) immediately prior to such transaction constitute less than a majority of the members of the Board of Directors of such Party (or, if applicable, a parent of such Party) or such surviving Person immediately following such transaction or (b) the Persons that beneficially owned, directly or indirectly, the shares of Voting Stock of such Party (or, if applicable, a parent of such Party) immediately prior to such transaction cease to beneficially own, directly or indirectly, shares of Voting Stock of such Party (or, if applicable, a parent of such Party) representing at least a majority of the total voting power of all outstanding classes of Voting Stock of the surviving Person in substantially the same proportions as their ownership of Voting Stock of such Party (or, if applicable, a parent of such Party) immediately prior to such transaction;

1.27.3. such Party (or, if applicable, a parent of such Party) sells or transfers to any Third Party, in one (1) or more related transactions, properties or assets representing all or substantially all of such Party's (or, if applicable, a parent of such Party) consolidated total assets to which this Agreement relates; or

1.27.4. the holders of capital stock of such Party (or, if applicable, a parent of such Party) approve a plan or proposal for the liquidation or dissolution of such Party (or, if applicable, a parent of such Party).

For the purpose of this definition of Change of Control: (x) "person" and "group" have the meanings given such terms under Section 13(d) and 14(d) of the United States Securities Exchange Act of 1934, codified at 15 U.S.C. § 78a et seq. as may be amended from time to time (the "**Exchange Act**"), and the term "group" includes any group acting for the purpose of acquiring, holding or disposing of securities within the meaning of Rule 13d-5(b)(1) under the Exchange Act; (y) a "beneficial owner" shall be determined in accordance with Rule 13d-3 under the Exchange Act; and (z) the terms "beneficially owned" and "beneficially own" shall have meanings correlative to that of "beneficial owner."

1.28. "**Clinical Study Report**" means a description and analysis of the results of a controlled clinical trial with respect to a product that meets the description in the International Council for Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use, Guideline E3, Structure and Content of Clinical Study Reports (ICH E3) (including all additions, supplements, and modifications thereto), or provides a reasonable rationale for not addressing all aspects of ICH E3 that are relevant for a given study.

1.29. "**CMC Activities**" means, with respect to a Research Product, product Directed to a ROFN Target, Licensed Compound or Licensed Product, all Manufacturing

activities (including the generation of all CMC Data) necessary to support the development or commercialization of such Research Product, product Directed to a ROFN Target, Licensed Compound or Licensed Product, as applicable, at the applicable stage of development, including formulation, process development, process qualification and validation, scale-up, analytic development, product characterization, stability testing, quality assurance and quality control.

1.30. "**CMC Data**" means the chemistry, manufacturing and controls data for each Research Product, product Directed to a ROFN Target, Licensed Compound or Licensed Product, as applicable, required by Applicable Law to be included or referenced in, or that otherwise supports, an application for Regulatory Approval.

1.31. "**Combination Product**" means a Licensed Product that, in addition to the applicable Licensed Compound, contains one (1) or more other active ingredients and is sold either as a fixed dose/unit or as separate doses/units in a single package.

1.32. [***]

1.33. "**Commercialization**" means any and all activities directed to the preparation for sale of, offering for sale of or sale of a Licensed Product, including activities related to marketing, promoting, distributing and importing such Licensed Product, and interacting with Regulatory Authorities regarding any of the foregoing. When used as a verb, "**to Commercialize**" and "**Commercializing**" mean to engage in Commercialization and "**Commercialized**" has a corresponding meaning.

1.34. "**Commercially Reasonable Efforts**" means [***].

1.35. "**Competing Product**" means (a) with respect to Morphic, any product that Morphic is prohibited from Exploiting pursuant to Section 4.5.1(a) or Section 4.5.1(b), as applicable, for so long as such Exploitation is prohibited under Section 4.5.1(a) or Section 4.5.1(b), as applicable, (b) with respect to AbbVie, any product that AbbVie is prohibited from Exploiting pursuant to Section 4.5.2 for so long as such Exploitation is prohibited under Section 4.5.2 and (c) with respect to the Parties' enforcement and defense rights set forth in Section 8.4 and Section 8.5, respectively, any product Directed to an Included Target.

1.36. "**Confidential Information**" has the meaning set forth in Section 9.1.1.

1.37. "**Control**" (and correlative terms such as "Controlled") means, subject to Section 13.3.2, with respect to any item of Information, Regulatory Documentation, material, Patent or other intellectual property right, possession of the right, whether directly or indirectly and whether by ownership, license or otherwise (other than by operation of the license and other grants in Section 4.1) to grant a license, sublicense or other right (including the right to reference Regulatory Documentation) to or under such Information, Regulatory Documentation, material, Patent or other intellectual property right as provided for herein without violating the terms of any agreement with any Third Party.

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1.38. "**Corporate Names**" means the Trademarks and logos identified on **Schedule 1.38** and such other names and logos as Morphic may designate in writing from time to time.

1.39. "**Cost-Share Budget**" has the meaning set forth in Section 5.7.3(c).

1.40. "**Cost-Share Notice**" has the meaning set forth in Section 5.7.1(b).

1.41. "**Cost-Share Option**" has the meaning set forth in Section 5.7.1(a).

1.42. "**Cost-Share Option Period**" means, for each Liver Fibrosis Compound, the time period commencing upon the completion of the first Phase IIb Clinical Trial for the first Licensed Product containing such Liver Fibrosis Compound and terminating [***] after the delivery of a Clinical Study Report for such Phase IIb Clinical Trial for such Liver Fibrosis Product and the Acceptance Date with respect to a Development plan and budget as set forth in Section 5.7.3(c) for such Liver Fibrosis Product.

1.43. "**Cost-Share Product**" means a Liver Fibrosis Product for which Morphic has exercised its Cost-Share Option pursuant to Section 5.7.1(b); provided, that if Morphic exercises its Opt-Out Right with respect to such Liver Fibrosis Product pursuant to Section 5.7.1(d), such Liver Fibrosis Product shall cease to be a Cost-Share Product [***] after Morphic exercised such Opt-Out Right.

1.44. "**CP Acquisition Transaction**" has the meaning set forth in Section 4.5.3(c).

1.45. "**Data Package**" means, (a) with respect to each Research Target, the complete results of the Development activities through the completion of IND Enabling Activities with respect to Research Products Directed to such Research Target, performed under the Research Plan for such Research Target (including, unless otherwise agreed by the Parties, at least one (1) Research Product that meets the Advancement Criteria and at least one (1) Backup Research Product), including all applicable CMC Data and such other information as AbbVie may reasonably request; it being understood and agreed that the Data Package with respect to a Research Target that is delivered [***] prior to the end of the Option Period pursuant to the parenthetical in Section 2.6.1 will, subject to Section 2.6, only contain information with respect to any applicable Research Product and Backup Research Product as in existence at the time of the requirement to deliver such Data Package under this Agreement, and (b) [***].

1.46. "**Data Protection Laws**" means any law, statute, declaration, decree, directive, legislative enactment, order, ordinance, regulation, rule or other binding restriction (as amended, consolidated or re-enacted from time to time) that relates to the protection of individuals with regards to the Processing of Personal Data.

1.47. "**Development**" means all activities related to research, pre-clinical and other non-clinical testing, test method development and stability testing, toxicology, CMC Activities, clinical studies, including Manufacturing in support thereof, statistical analysis and

report writing, the preparation and submission of INDs and Drug Approval Applications, regulatory affairs with respect to the foregoing and all other activities necessary or reasonably useful or otherwise requested or required by a Regulatory Authority as a condition or in support of obtaining or maintaining a Regulatory Approval. When used as a verb, "**Develop**" means to engage in Development.

1.48. "**Development Costs**" means, with respect to a Liver Fibrosis Product, the reasonable, documented internal and out-of-pocket costs and expenses incurred by or on behalf of AbbVie or its Affiliates with respect to Development of such Liver Fibrosis Product, including, for clarity, any post-Regulatory Approval safety or efficacy studies; it being understood and agreed that "Development Costs" will be consistent with Accounting Standards in accordance with AbbVie's then-current practices and reported in a manner consistent with its other comparable, internal clinical development programs (at all times at a similar stage of clinical development to the applicable Liver Fibrosis Product).

1.49. "**Development Cost Report**" has the meaning set forth in Section 7.8.2.

1.50. "**Directed**" or "**Directed to**" means with respect to a Research Target, a ROFN Target or an Included Target and any product, that such product inhibits the Research Target, ROFN Target or Included Target, as applicable, as its intended mechanism of action and, solely with respect to Research Targets, with at least the selectivity profile set forth on **Schedule 1.50** for such Research Target. With respect to the Dual Research Target, the phrase "Directed to" means that the applicable product inhibits each of [***] and [***], in each case, as its intended mechanism of action with at least the selectivity profile set forth on **Schedule 1.50**.

1.51. "**Disclosing Party**" has the meaning set forth in Section 9.1.1.

1.52. "**Dispute**" has the meaning set forth in Section 13.5.1.

1.53. "**Distributor**" means any Person appointed by AbbVie or any of its Affiliates or its or their Sublicensees to distribute, market and sell Licensed Product with or without packaging rights, in one (1) or more countries in the Territory, in circumstances where such Person purchases its requirements of Licensed Product from AbbVie or its Affiliates or its or their Sublicensees but does not otherwise make any royalty or other payment to AbbVie or its Affiliates or its or their Sublicensees with respect to its intellectual property rights with respect to such Licensed Product.

1.54. "**Divest**" has the meaning set forth in Section 4.5.3(c).

1.55. "**DOJ**" has the meaning set forth in the definition of "HSR Filing".

1.56. "**Dollars**" or "**$**" means United States Dollars.

1.57. "**Drug Approval Application**" means a New Drug Application as defined in the FFDCA (an "**NDA**") or any corresponding foreign application in the Territory, including, with respect to the European Union, a marketing authorization application filed with the EMA

pursuant to the centralized approval procedure or with the applicable Regulatory Authority of a country in Europe with respect to the mutual recognition procedure or any other national approval (a "**Marketing Authorization Application**").

1.58. "**Dual Research Target**" has the meaning set forth in the definition of Research Target.

1.59. "**EEA**" means the European Economic Area.

1.60. "**Effective Date**" means the Business Day following the date on which HSR Clearance with respect to the Options and the Research Targets occurs.

1.61. "**EMA**" means the European Medicines Agency and any successor agency thereto.

1.62. "**European Union**" means the economic, scientific and political organization of member states as it may be constituted from time to time, in all cases to include the United Kingdom.

1.63. "**Exchange Act**" has the meaning set forth in the definition of Change of Control.

1.64. "**Execution Date**" has the meaning set forth in the preamble hereto.

1.65. "**Exercise Notice**" has the meaning set forth in Section 3.1.2.

1.66. "**Existing Patents**" means, as of the Execution Date, the Effective Date, each Option Bringdown Date and each ROFN Bringdown Date, as applicable, all Morphic Patents existing as of such date.

1.67. "**Exploit**" means to make, have made, import, use, sell or offer for sale, including to research, Develop, Commercialize, register, modify, enhance, improve, Manufacture, have Manufactured, hold or keep (whether for disposal or otherwise), formulate, optimize, have used, export, transport, distribute, promote, market, have sold or otherwise dispose of a product. "**Exploitation**" means the act of Exploiting a product.

1.68. "**FDA**" means the United States Food and Drug Administration and any successor agency thereto.

1.69. "**FFDCA**" means the United States Federal Food, Drug, and Cosmetic Act, as set forth at 21 U.S.C. ch. 9 §301 et seq., as may be amended from time to time, together with any rules, regulations and requirements promulgated thereunder (including all additions, supplements, extensions and modifications thereto).

1.70. "**Field**" means [***].

1.71. "**First Commercial Sale**" means, with respect to a Licensed Product and a country, the first sale for monetary value of such Licensed Product in such country by AbbVie, its Affiliates or its or their Sublicensees to a Third Party after all Regulatory Approvals for such Licensed Product has been obtained in such country. Sales prior to receipt of all Regulatory Approvals for such Licensed Product in such country, such as so-called "treatment IND sales," "named patient sales," and "compassionate use sales," shall not be construed as a "First Commercial Sale".

1.72. "**FTC**" has the meaning set forth in the definition of "HSR Filing".

1.73. "**Generic Product**" means, with respect to a particular Licensed Product in a particular country in the Territory, any pharmaceutical or biological product that (a) is distributed by a Third Party under a Drug Approval Application or Abbreviated New Drug Application (or similar applications) approved by a Regulatory Authority in reliance, in whole or in part, on the prior Drug Approval Application (or on safety or efficacy data submitted in support of the prior approval) of such Licensed Product, including any product authorized for sale (i) in the U.S. pursuant to Section 505(b)(2) or Section 505(j) of the FFDCA (21 U.S.C. § 355(b)(2) and 21 U.S.C. § 355(j), respectively), (ii) in the EU pursuant to a provision of Articles 10, 10a or 10b of Parliament and Council Directive 2001/83/EC as amended (including an application under Article 6.1 of Parliament and Council Regulation (EC) No. 726/2004 that relies for its content on any such provision) or (iii) in any other country pursuant to an equivalent of such provisions or (b) is substitutable under Applicable Law for such Licensed Product when dispensed without the intervention of a physician or other health care provider with prescribing authority.

1.74. "**Government Official**" means (a) any Person employed by or acting on behalf of a government, government-controlled agency or entity or public international organization, (b) any political party, party official or candidate, (c) any Person who holds or performs the duties of an appointment, office or position created by custom or convention or (d) any Person who holds himself out to be the authorized intermediary of any of the foregoing.

1.75. "**Governmental Authority**" means any multinational, federal, national, state, provincial, local or other entity, office, commission, bureau, agency, political subdivision, instrumentality, branch, department, authority, board, court, arbitral or other tribunal exercising executive, judicial, legislative, police, regulatory, administrative or taxing authority or functions of any nature pertaining to government.

1.76. "**Hatch-Waxman Act**" means the U.S. "Drug Price Competition and Patent Term Restoration Act" of 1984, as set forth at 21 U.S.C. § 355(b)(2)(A)(iv) or (j)(2)(A)(vii)(IV).

1.77. "**HSR Act**" means the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as codified at 15 U.S.C. § 18a, as may be amended from time to time, and the rules and regulations promulgated thereunder, or foreign equivalent thereof under Applicable Law (including all additions, supplements, extensions and modifications thereto).

1.78. "**HSR Clearance**" means, with respect to (a) the Options and Research Targets and (b) each ROFN Target and corresponding ROFN Terms, as applicable, the expiration or termination of all applicable waiting periods and requests for information (and any extensions thereof) under the HSR Act.

1.79. "**HSR Filing**" means (a) filings by Morphic and AbbVie with the United States Federal Trade Commission (the "**FTC**") and the Antitrust Division of the United States Department of Justice (the "**DOJ**") of a Notification and Report Form for Certain Mergers and Acquisitions (as that term is defined in the HSR Act) with respect to (i) the Options and Research Targets and (ii) each ROFN Target and corresponding ROFN Terms, as applicable, together with all required documentary attachments thereto, or (b) equivalent filings, if any, with applicable Governmental Authorities where such filings are required.

1.80. "**HSR Proceeding**" has the meaning set forth in Section 13.15.2.

1.81. "**IIT Study**" means a human clinical study initiated, sponsored and conducted by an investigator at a research institution for which a Party or its Affiliate provides drug supplies; provided that such Party or Affiliate has no right or ability to direct or control such human clinical study; it being understood and agreed that "IIT Study" excludes (a) any human clinical study that could reasonably be expected, in and of itself, to be used to obtain a regulatory approval and (b) any human clinical study that includes a head-to-head comparison of a Research Product, either alone or in combination with any other pharmaceutical compound, with such Research Product, either alone or in combination with any other pharmaceutical compound.

1.82. "**In-License Agreements**" means all written license and other written agreements pursuant to which Morphic or any of its Affiliates acquires, licenses or otherwise obtains from a Third Party any intellectual property rights licensed by Morphic to AbbVie hereunder, including the Morphic Patents and the Morphic Know-How.

1.83. "**In-License Schedule**" means **Schedule 1.83**, as such schedule may be updated in connection with the delivery of any Updated Disclosure Schedules.

1.84. "**Included Target**" means any Research Target for which AbbVie exercised an Option and any ROFN Target for which the Parties agree on ROFN Terms pursuant to Section 3.2.

1.85. "**Included Target Patent**" has the meaning set forth in Section 8.3.1(b).

1.86. "**Inclusion Date**" means, with respect to an Included Target, (a) if such Included Target is a Research Target, the Option Effective Date for such Research Target and (b) if such Included Target is a ROFN Target, (i) if AbbVie determines that no HSR Filing is required with respect thereto, the date on which the Parties agree in writing on the ROFN Terms for such ROFN Target pursuant to Section 3.2 and (ii) if AbbVie determines that an HSR Filing is required with respect thereto, the date of HSR Clearance with respect to such ROFN Target.

1.87. "**IND**" means (a) an investigational new drug application filed with the FDA for authorization to commence clinical studies and its equivalent in other countries or regulatory jurisdictions and (b) all supplements and amendments that may be filed with respect to the foregoing.

1.88. "**IND Enabling Activities**" means, with respect to a particular Research Product, all Development activities required (including the compilation of data resulting therefrom (including CMC Data) in a form suitable) to support the filing of an effective IND with FDA (*e.g.*, that would not be subject to a clinical hold within thirty (30) days of filing) sufficient to conduct human clinical trials for such Research Product in the United States.

1.89. "**Indemnification Claim Notice**" has the meaning set forth in Section 11.3.1.

1.90. "**Indemnified Party**" has the meaning set forth in Section 11.3.1.

1.91. "**Indemnifying Party**" has the meaning set forth in Section 11.3.1.

1.92. "**Indication**" means, with respect to a Licensed Product, a diagnostic, prophylactic or therapeutic use for a disease or condition, which, (a) for a clinical trial for such Licensed Product, would be the use of such Licensed Product for which such clinical trial is intended to determine safety or effectiveness and (b) if the NDA for such Licensed Product is approved in the U.S., would be reflected in the "Indications and Usage" section of labeling pursuant to 21 C.F.R. § 201.57(c)(2) (or comparable labelling section under Applicable Laws) or, to the extent applicable, any comparable labeling section outside the U.S., in each case ((a) and (b)), subject to the following, including the final sentence of this Section 1.92: (i) subtypes of the same disease or condition are not additional Indications for such Licensed Product; (ii) uses of such Licensed Product for the same disease or condition for different populations or population sub-types are not additional Indications for such Licensed Product; (iii) the approved use of such Licensed Product for such disease or condition in different combinations or co-administration of treatments are not additional Indications for such Licensed Product (*e.g.*, monotherapy vs. add-on or combination therapy with another agent in the same disease); (iv) diagnosis, treatment, prevention and cure of the same disease or disease subtype with such Licensed Product are not additional Indications for such Licensed Product; (v) the approved use of such Licensed Product for such disease or condition in a different line of treatment or a different temporal position in a treatment algorithm for the same disease or condition are not additional Indications for such Licensed Product (*e.g.*, first line vs. second line therapy in the same disease or condition); and (vi) treatment of the same disease or condition with such Licensed Product in an expanded, modified or additional patient population are not additional Indications for such Licensed Product. For clarity, the Parties agree that each disease or condition set forth on **Schedule 1.92** constitutes a separate and distinct Indication.

1.93. "**Indirect Taxes**" has the meaning set forth in Section 7.10.2.

1.94. "**Information**" means all technical, scientific and other know-how and information, trade secrets, knowledge, technology, means, methods, processes, practices,

formulae, instructions, skills, techniques, procedures, experiences, ideas, technical assistance, designs, drawings, assembly procedures, computer programs, apparatuses, specifications, data, results and other material, including: biological, chemical, pharmacological, toxicological, pharmaceutical, physical and analytical, pre-clinical, clinical, safety, regulatory, manufacturing and quality control data and information, including study designs and protocols, assays and biological methodology, in each case (whether or not confidential, proprietary, patented or patentable) in written, electronic or any other form now known or hereafter developed.

1.95. "**Infringement**" has the meaning set forth in Section 8.4.1.

1.96. "**Initial Disclosure Schedules**" has the meaning set forth in Section 10.2.1.

1.97. "**Initiation**" means, with respect to a clinical trial, the first dosing of the first human subject in such clinical trial. When used as a verb, "**Initiated**" has a corresponding meaning.

1.98. "**Integrin Conformational Stabilization Patents**" means the Patents Controlled by Morphic on or after the Effective Date claiming stable integrin conformations, or methods of producing or generating the same, or methods of stabilizing specific integrin conformations with molecular fragments in, in each case, in vitro and in silico modeling activity. Integrin Conformational Stabilization Patents existing as of the Execution Date are set forth on **Schedule 1.98**.

1.99. "**Joint Governance Committee**" or "**JGC**" has the meaning set forth in Section 6.1.

1.100. "**Joint IP**" has the meaning set forth in Section 8.1.2.

1.101. "**Joint Know-How**" has the meaning set forth in Section 8.1.2.

1.102. "**Joint Patents**" has the meaning set forth in Section 8.1.2.

1.103. "**Key Development Activities**" has the meaning set forth in Section 2.1.2.

1.104. "**Key Personnel**" has the meaning set forth in Section 2.4.3.

1.105. "**Knowledge**" means, with respect to Morphic [***]; provided that, [***].

1.106. "**Lead Research Product**" means, with respect to Research Target, a Research Product Directed to such Research Target that meets the Advancement Criteria and for which IND Enabling Activities are performed for an Indication other than a Liver Fibrosis Indication.

1.107. "**Licensed Compound**" means, with respect to each Included Target, any small molecule antagonist Directed to such Included Target that is (a) generated or Developed by or on behalf of Morphic or any of its Affiliates on or prior to (i) with respect to each Research

Target, the earlier of (A) the completion of the Research Plan and (B) the expiration of all Option Periods and (ii) with respect to each ROFN Target, the Inclusion Date for such ROFN Target or (b) identified, obtained, developed, created, synthesized, designed, derived or otherwise generated (whether in whole or in substantial part, and not necessarily by means of a single step), by or on behalf of AbbVie (other than Morphic or any of its Affiliates), from any of the small molecules described in clause (a) through the use of, or reliance on, any Morphic Know-How, Joint Know-How or other Morphic Confidential Information under this Agreement, including (v) if AbbVie exercises its Option with respect to [***], (w) if AbbVie exercises its Option with respect to [***], (x) if AbbVie exercises its Option with respect to [***], (y) if the Parties agree on ROFN Terms pursuant to Section 3.2 with respect to [***] and (z) if the Parties agree on ROFN Terms pursuant to Section 3.2 with respect to [***].

1.108. "**Licensed Product**" means any product containing a Licensed Compound, alone or in combination with one (1) or more other active ingredients in any and all forms, in current and future formulations, dosage forms and strengths, and delivery modes including any improvements thereto.

1.109. "**Liver Fibrosis Compound**" means a Licensed Compound Directed to an Included Target (other than [***] and any ROFN Target) that is chemically distinct from the Lead Research Product and Backup Research Product Directed to such Included Target, that meets the transition criteria set forth in the Research Plan for a Liver Fibrosis Indication and for which Morphic has completed Development through the completion of IND Enabling Activities and the Acceptance Date has occurred with respect to the Data Package with respect thereto, which Data Package demonstrates that such compound meets the Advancement Criteria for a Liver Fibrosis Indication.

1.110. "**Liver Fibrosis Development Committee**" has the meaning set forth in Section 5.7.4.

1.111. "**Liver Fibrosis Indication**" means any fibrotic condition of the liver in humans, including those caused by nonalcoholic steatohepatitis, [***], primary sclerosing cholangitis, [***].

1.112. "**Liver Fibrosis Product**" means a Liver Fibrosis Compound that is being Developed by or on behalf of AbbVie, its Sublicensees or any of their respective Affiliates for a Liver Fibrosis Indication.

1.113. "**Losses**" has the meaning set forth in Section 11.1.

1.114. "**Major European Market**" means each of the [***].

1.115. "**Manufacture**" and "**Manufacturing**" means all activities related to the production, manufacture, processing, filling, finishing, packaging, labeling, shipping and holding of any Research Product, product Directed to a ROFN Target, Licensed Compound or Licensed Product or any intermediate of any of the foregoing, including formulation, process development, process qualification and validation, scale-up, pre-clinical, clinical and commercial

manufacture and analytic development, product characterization, stability testing, quality assurance and quality control.

1.116. "**Manufacturing Process**" has the meaning set forth in Section 5.3.

1.117. "**Manufacturing Technology Transfer**" has the meaning set forth in Section 5.3.

1.118. "**Marketing Authorization Application**" has the meaning set forth in the definition of "Drug Approval Application".

1.119. "**Milestone Events**" has the meaning set forth in Section 7.2.

1.120. "**Milestone Payments**" has the meaning set forth in Section 7.2.

1.121. "**Morphic**" has the meaning set forth in the preamble hereto.

1.122. "**Morphic Indemnitees**" has the meaning set forth in Section 11.1.

1.123. "**Morphic IP**" means Morphic Know-How and Morphic Patents.

1.124. "**Morphic Know-How**" means any and all Information Controlled by Morphic or any of its Affiliates as of the Execution Date or at any time during the Term that is necessary or useful for the Exploitation of a Research Product, a Licensed Compound or a Licensed Product, but excluding any (a) Joint Know-How, (b) any Information that is in the public domain or is otherwise generally known, and (c) any Information licensed to Morphic or any of its Affiliates pursuant to the Exclusive License Agreement by and between Children's Medical Center Corporation and Morphic Rock Holding, LLC (the "**CMCC Agreement**"). Morphic Know-How may include Information developed under the Research Plan for a Research Target, even if AbbVie does not exercise the Option for such Research Target.

1.125. "**Morphic Patent**" means any Patent Controlled by Morphic or any of its Affiliates as of the Execution Date or at any time during the Term that is necessary or useful for the Exploitation of a Research Product, a Licensed Compound or a Licensed Product, but excluding any Joint Patents. The Morphic Patents include the Existing Patents but exclude (a) the Integrin Conformational Stabilization Patents and (b) any Patents licensed to Morphic or any of its Affiliates pursuant to the CMCC Agreement.

1.126. "**Morphic Platform IP**" has the meaning set forth in Section 2.4.6(a).

1.127. "**Morphic Regulatory Documentation**" has the meaning set forth in Section 10.2.1(g).

1.128. "**NDA**" has the meaning set forth in the definition of "Drug Approval Application".

1.129. "**Net Sales**" means, [***]

Net Sales shall not include [***]. Net Sales shall include [***]. Net Sales shall not include [***].

Net Sales shall be calculated in accordance with the standard internal policies and procedures of AbbVie, its Affiliates, or its or their Sublicensees, which must be in accordance with the consolidated financial statements of AbbVie prepared in accordance with Accounting Standards. There shall be no double counting in determining the foregoing deductions from gross amounts invoiced to calculate "Net Sales" hereunder.

For purposes of calculating Net Sales, all Net Sales shall be converted into Dollars in accordance with Section 7.9.

If a Licensed Product is a Combination Product, the Net Sales for such Combination Product in each country or jurisdiction shall be calculated as follows:

(i) [***].

1.130. "**Non-Breaching Party**" has the meaning set forth in Section 12.2.1(a).

1.131. "**Notice Period**" has the meaning set forth in Section 12.2.1(a).

1.132. "**Opt-In**" means the withdrawal under Article 83(4) of the Agreement on a Unified Patent Court between the participating Member States of the European Union (2013/C 175/01) of the Opt-Out of a Patent.

1.133. "**Option**" has the meaning set forth in Section 3.1.1.

1.134. "**Option Bringdown Date**" has the meaning set forth in Section 10.2.2.

1.135. "**Option Effective Date**" means with respect to an Option, the date upon which AbbVie delivers to Morphic the Exercise Notice with respect to such Option in accordance with Section 3.1.2.

1.136. "**Option Period**" means, for each Research Target, the time period commencing upon the Effective Date and terminating [***] after the Acceptance Date for the Data Package for such Research Target; it being understood and agreed that, notwithstanding anything to the contrary, all Option Periods shall expire no later than the fifth (5^{th}) anniversary of the Effective Date (or such later date as may be agreed in writing by the Parties); provided that such five (5)-year period shall be extended by any period of time equal to the cumulative period of time during which Morphic is unable to perform its obligations hereunder due to a force majeure in accordance with Section 13.1.

1.137. "**Opt-Out**" means the opt-out of a Patent from the exclusive competence of the Unified Patent Court under Article 83(3) of the Agreement on a Unified Patent Court between the participating Member States of the European Union (2013/C 175/01).

1.138. "**Opt-Out Right**" has the meaning set forth in Section 5.7.1(d).

1.139. "**Other Morphic Agreements**" means all license and other agreements of Morphic or its Affiliates regarding Information, inventions, materials or intellectual property that has been used by or on behalf of Morphic or its Affiliates in, or is otherwise necessary or useful for, identifying, generating or optimizing a Research Product or small molecule antagonist Directed to a ROFN Target or otherwise performing the Research Plan.

1.140. "**Overrun**" has the meaning set forth in Section 7.8.3.

1.141. "**Party**" and "**Parties**" have the meaning set forth in the preamble hereto.

1.142. "**Patent Challenge**" has the meaning set forth in Section 12.2.5.

1.143. "**Patents**" means: (a) all national, regional and international patents and patent applications, including provisional patent applications; (b) all patent applications filed either from such patents, patent applications or provisional applications or from an application claiming priority from either of these, including divisionals, continuations, continuations-in-part, provisionals, converted provisionals and continued prosecution applications; (c) any and all patents that have issued or in the future issue from the foregoing patent applications ((a) and (b)), including utility models, petty patents, innovation patents and design patents and certificates of invention; (d) any and all extensions or restorations by existing or future extension or restoration mechanisms, including revalidations, reissues, re-examinations and extensions (including any pediatric exclusivity, supplementary protection certificates and the like) of the foregoing patents or patent applications ((a), (b) and (c)); and (e) any similar rights, including so-called pipeline protection or registration patent of any of such foregoing patent applications and patents.

1.144. "**Person**" means an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, unincorporated association, joint venture or other similar entity or organization, including a government or political subdivision, department or agency of a government.

1.145. "**Personal Data**" means any data that identifies or could identify a living person and does not include anonymized, key-coded data.

1.146. "**Phase II Clinical Trial**" means a controlled human clinical trial of a Licensed Product, the principal purpose of which is to evaluate the effectiveness of such Licensed Product for a particular indication or indications in patients with the disease or condition under study and to determine the common short-term side effects and risks associated with such Licensed Product, as described in 21 C.F.R. § 312.21(b), as amended from time to time, or the corresponding foreign regulations.

1.147. "**Phase IIa Clinical Trial**" means a Phase II Clinical Trial of a Licensed Product designed to assess dosing, safety and pharmacodynamic activity in at least one (1) target patient population.

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

1.148. "**Phase IIb Clinical Trial**" means a Phase II Clinical Trial designed to evaluate the safety and efficacy of a Licensed Product in a target patient population with dosing duration, clinical endpoints, and sample size appropriate to enable the design of Phase III Clinical Trials.

1.149. "**Phase III Clinical Trial**" means a human clinical trial of a Licensed Product that is designed or intended to (a) establish that such Licensed Product is safe and efficacious for its intended use, (b) define warnings, precautions and adverse reactions that are associated with the such Licensed Product in the dosage range to be prescribed and (c) support Regulatory Approval for such Licensed Product in any of the United States, any Major European Market, Japan or China, as described in 21 C.F.R. § 312.21(c), as amended from time to time, or the corresponding foreign regulations.

1.150. "**Pre-Existing Entities**" has the meaning set forth in Section 4.5.3.

1.151. "**Pre-GLP Activities**" means, with respect to a particular Research Product, all Development activities (including the compilation of data resulting therefrom (including CMC Data)) performed in accordance with the Research Plan for such Research Product up to (but not including) GLP studies evaluating toxicology, non-clinical safety and in vitro and ex vivo genotoxicity.

1.152. "**Pre-Transaction Entities**" has the meaning set forth in Section 13.3.2.

1.153. "**Processing**" has the meaning given to such term in the Data Protection Laws, and "**Process**" and "**Processed**" shall be construed accordingly.

1.154. "**Product Information**" has the meaning set forth in Section 9.1.1.

1.155. "**Product Trademark**" has the meaning set forth in Section 8.8.1.

1.156. "**Prosecute**" or "**Prosecution**" has the meaning set forth in Section 8.3.1.

1.157. "**Prosecution Party**" means, with respect to a Patent, the Party with the then-current right under this Agreement to Prosecute such Patent.

1.158. "**Qualified CMO Agreement**" has the meaning set forth in Section 2.3.2.

1.159. "**Receiving Party**" has the meaning set forth in Section 9.1.1.

1.160. "**Regulatory Approval**" means, with respect to a country in the Territory, any and all approvals (including approvals of Drug Approval Applications), licenses, registrations or authorizations of any Regulatory Authority necessary to commercially distribute, sell and market a Licensed Product in such country, including, where applicable, (a) commercially reasonable pricing or reimbursement approval in such country, (b) pre- and post-approval marketing authorizations (including any prerequisite Manufacturing approval or authorization related thereto), and (c) labeling approval; it being understood and agreed that if aggregate, cumulative Net Sales for a Licensed Product in the [***] exceed [***], then such

Licensed Product shall be deemed to have achieved Regulatory Approval in the [***] for purposes of Section 7.2.2 and Section 1.178(b).

1.161. "**Regulatory Authority**" means any applicable supra-national, federal, national, regional, state, provincial or local regulatory agencies, departments, bureaus, commissions, councils or other government entities regulating or otherwise exercising authority with respect to the Exploitation of Research Products, products Directed to a ROFN Target or Licensed Products, as applicable, in the Territory, including the FDA in the United States and the EMA in the European Union [***].

1.162. "**Regulatory Documentation**" means: all (a) applications (including all INDs and Drug Approval Applications), registrations, licenses, authorizations and approvals (including Regulatory Approvals) and (b) correspondence and reports submitted to or received from Regulatory Authorities (including minutes and official contact reports relating to any communications with any Regulatory Authority) and all supporting documents with respect thereto, including all adverse event files and complaint files; in either case ((a) and (b)) relating to a Research Product, product Directed to a ROFN Target or Licensed Product, as applicable.

1.163. "**Regulatory Exclusivity Period**" means, with respect to each Licensed Product in any country in the Territory, a period of exclusivity (other than Patent exclusivity) granted or afforded by Applicable Law or by a Regulatory Authority in such country which confers an exclusive Commercialization period during which AbbVie or its Affiliates or Sublicensees have the exclusive right to market and sell a Licensed Compound or Licensed Product in such country through a regulatory exclusivity right.

1.164. "**Research Plan**" means the written plan that includes all discovery and pre-clinical research activities to be performed by each Party with respect to each Research Product through the completion of IND Enabling Activities and allocated responsibilities for such activities between the Parties; provided, that the Parties acknowledge and agree that as of the Execution Date, the Parties intend for Morphic to conduct all of the activities under the Research Plan, which plan may be amended or updated from time to time in accordance with the terms of this Agreement. [***].

1.165. "**Research Product**" means, with respect to a particular Research Target, a product comprising a small molecule antagonist Directed to such Research Target that is generated or Developed by or on behalf of Morphic, its Sublicensees or any of their respective Affiliates on or prior to the earlier of (a) the completion of the Research Plan and (b) the expiration of all Option Periods.

1.166. "**Research Target**" means each of the following [***].

1.167. "**Research Target Program**" means, with respect to a Research Target, all Development activities pursuant to the Research Plan with respect to such Research Target.

1.168. "**Reversion Product**" means, with respect to a Terminated Territory, a Licensed Product, that is not a Combination Product, Directed to a Terminated Target in such

Terminated Territory and is the subject of clinical Development or Commercialization by or on behalf of AbbVie, its Sublicensees or any of their respective Affiliates in the Territory on or prior to the effective date of termination of this Agreement.

1.169. "**ROFN**" has the meaning set forth in Section 3.2.1.

1.170. "**ROFN Activities**" means any Development activities performed by or on behalf of Morphic or any of its Affiliates with respect to any product Directed to a ROFN Target.

1.171. "**ROFN Bringdown Date**" has the meaning set forth in Section 10.2.3.

1.172. "**ROFN Negotiation Period**" has the meaning set forth in Section 3.2.3(a).

1.173. "**ROFN Notice**" has the meaning set forth in Section 3.2.3(a).

1.174. "**ROFN Period**" means, with respect to each ROFN Target, the time period commencing upon the Effective Date and terminating on the [***] day after the Acceptance Date with respect to the [***] for such ROFN Target.

1.175. "**ROFN Target**" means each of the following integrins: [***].

1.176. "**ROFN Terms**" has the meaning set forth in Section 3.2.3(a).

1.177. "**Royalty Claim**" means, with respect to a Licensed Product in a country, a Valid Claim of a Morphic Patent or Joint Patent in such country that claims (a) the composition of matter of such Licensed Product in such country or (b) the use of such Licensed Product in such country for all Indications for which a Drug Approval Application approval has been received for such Licensed Product in such country as shown in the "Indications and Usage" or comparable section of the approved labeling for such Licensed Product in such country.

1.178. "**Royalty Term**" means, with respect to each Licensed Product and each country in the Territory, the period beginning on the date of the First Commercial Sale of such Licensed Product in such country and ending on the latest to occur of: (a) the expiration, invalidation or abandonment of the last-to-expire Royalty Claim with respect to such Licensed Product in such country but in the case of a Royalty Claim described in Section 1.177(b), only for so long as no Generic Product for such Licensed Product has launched in such country; (b) the [***] anniversary of the First Commercial Sale of such Licensed Product in such country, and (c) the expiration of the Regulatory Exclusivity Period in such country for such Licensed Product.

1.179. "**Safety Reason**" has the meaning set forth in Section 12.2.2(a).

1.180. "**Second Request**" has the meaning set forth in Section 12.2.4.

1.181. "**Senior Officer**" means, with respect to Morphic, its [***] and with respect to AbbVie, its [***].

1.182. "**Sublicensee**" means a Person, other than an Affiliate or a Distributor, that is granted a sublicense (or further right of reference) by AbbVie or its Affiliate under the grants in Section 4.1, as provided in Section 4.2.

1.183. "**Sublicense Income**" has the meaning set forth in Section 7.4(b)(2).

1.184. "**Tax Cost Benefit**" has the meaning set forth in Section 7.10.3.

1.185. "**Technology Transfer Product**" means (a) if AbbVie exercises the Option with respect to a Research Target, the Research Products that are generated or Developed by or on behalf of Morphic or its Affiliates under the Research Plan Directed to such Research Target and (b) if the Parties agree on ROFN Terms with respect to a ROFN Target and, if AbbVie determines that an HSR Filing is required with respect thereto, HSR Clearance is obtained with respect to such ROFN Target, the products Directed to such ROFN Target that are being Developed by or on behalf of Morphic or its Affiliates at such time.

1.186. "**Term**" has the meaning set forth in Section 12.1.

1.187. "**Terminated Target**" has the meaning set forth in Section 12.4.

1.188. "**Terminated Territory**" has the meaning set forth in Section 12.4.

1.189. "**Termination Notice**" has the meaning set forth in Section 12.2.1(a).

1.190. "**Territory**" means, with respect to an Included Target, the entire world, excluding any Terminated Territory with respect to such Included Target.

1.191. "**Third Country**" means a country outside of the European Economic Area (EEA) or a country not deemed to provide an adequate level of protection for Personal Data by the European Commission.

1.192. "**Third Party**" means any Person other than Morphic, AbbVie and their respective Affiliates.

1.193. "**Third Party Claims**" has the meaning set forth in Section 11.1.

1.194. "**Third Party Infringement Claim**" has the meaning set forth in Section 8.6.1.

1.195. "**Third Party Offer**" has the meaning set forth in Section 3.2.2(a).

1.196. "**Third Party Payments**" has the meaning set forth in Section 7.5.

1.197. "**Third Party Right**" has the meaning set forth in Section 8.7.

1.198. "**Trademark**" means any word, name, symbol, color, shape, designation or any combination thereof, including any trademark, service mark, trade name, brand name,

sub-brand name, trade dress, product configuration, program name, delivery form name, certification mark, collective mark, logo, tagline, slogan, design or business symbol, that functions as an identifier of source or origin, whether or not registered and all statutory and common law rights therein and all registrations and applications therefor, together with all goodwill associated with, or symbolized by, any of the foregoing.

1.199. "**Transaction Party**" has the meaning set forth in Section 4.5.3.

1.200. "**United States**" or "**U.S.**" means the United States of America and its territories and possessions (including the District of Columbia and Puerto Rico).

1.201. "**Updated Disclosure Schedules**" means any of the Updated Research Product Disclosure Schedules or the Updated ROFN Disclosure Schedules.

1.202. "**Updated Research Product Disclosure Schedules**" has the meaning set forth in Section 10.2.4(a).

1.203. "**Updated ROFN Disclosure Schedules**" has the meaning set forth in Section 10.2.4(b).

1.204. "**Valid Claim**" means, (i) with respect to a claim of any issued and unexpired Patent, that the validity, enforceability or patentability of such claim has not been affected by (a) irretrievable lapse, abandonment, revocation, dedication to the public or disclaimer or (b) a holding, finding or decision of invalidity, unenforceability or non-patentability by a court, governmental agency, national or regional patent office or other appropriate body that has competent jurisdiction, such holding, finding or decision being final and unappealable or unappealed within the time allowed for appeals or (ii) a pending patent application that has been filed and prosecuted in good faith and no more [***] years have elapsed since the filing of the earliest priority application for such patent application. For clarity, a claim which issues later from such pending patent application above shall be considered a Valid Claim as defined in this Section as of the date of issuance.

1.205. "**Voting Stock**" has the meaning set forth in the definition of "Change of Control."

1.206. "**Withholding Party**" has the meaning set forth in Section 7.10.1.

1.207. "**Working Group**" has the meaning set forth in Section 6.3.

ARTICLE 2
RESEARCH AND DEVELOPMENT PROGRAMS

2.1. Research Target Programs.

2.1.1. Principal Objectives. The principle objective of the activities under the Research Plan is for Morphic to generate and Develop Research Products Directed to each Research Target, including performing IND Enabling Activities for at least [***] Research

Product Directed to each such Research Target that meets the Advancement Criteria for an Indication other than a Liver Fibrosis Indication and generating at least [***] Backup Research Product Directed to each such Research Target. In accordance with ARTICLE 6, the JGC shall determine the direction of the Development with respect to Research Products Directed against each Research Target.

2.1.2. Diligence. With respect to each Research Target, Morphic shall use Commercially Reasonable Efforts to achieve the objectives of the Research Plan for such Research Target as soon as reasonably practicable. Without limiting the generality of the forgoing, (a) each Party shall perform the Development activities set forth in the Research Plan in accordance with the terms thereof and (b) with respect to each Research Target, Morphic shall use Commercially Reasonable Efforts to (i) generate and Develop at least [***] Research Product Directed to such Research Target that meet the Advancement Criteria for an Indication other than a Liver Fibrosis Indication, (ii) perform IND Enabling Activities for at least [***] Research Product Directed to such Research Target for an Indication other than a Liver Fibrosis Indication, (iii) generate at least one (1) Backup Research Product Directed to such Research Target, (iv) perform Pre-GLP Activities with respect to at least [***] Backup Research Product Directed to such Research Target ((i) — (iv), the "**Key Development Activities**") and (v) prepare and deliver to AbbVie the Data Package with respect to such Research Target, in each case ((i) — (v)), prior to the expiration of the Option Period. Each Party shall conduct its activities under the Research Plan in accordance with this ARTICLE 2 and the other terms and conditions of this Agreement.

2.2. Review of Plans. The JGC shall review the Research Plan at least once each Calendar Quarter for the purpose of considering appropriate amendments thereto, and either Party, through its representatives on the JGC, may propose amendments to the Research Plan at any time. No amendment to the Research Plan shall be effective unless and until approved by the JGC (including Section 6.2.3, if applicable).

2.3. Manufacturing.

2.3.1. Morphic shall be responsible for the Manufacture and supply of (a) all pre-clinical requirements of Research Products and all components of the foregoing necessary to perform its obligations under the Research Plan in accordance with the terms hereof and (b) all pre-clinical and clinical requirements of products Directed to ROFN Targets for the ROFN Activities.

2.3.2. Without limiting the foregoing, with respect to each Research Product, Morphic shall consult AbbVie, through the JGC, prior to entering into any agreement(s) with Third Party manufacturer(s) to supply the quantities of each Research Product or any components thereof set forth or otherwise for use in the Research Plan, and the JGC shall discuss the material terms of each such agreement. Upon Morphic's request, AbbVie shall provide reasonable assistance to Morphic with respect to the negotiation of any such agreement. Each such agreement shall constitute a "**Qualified CMO Agreement**" if either (1) AbbVie consents to the material terms of such agreement; provided, that (x) AbbVie shall consider any such

proposed terms in good faith and (y) AbbVie shall not unreasonably withhold, condition or delay such consent, or (2) Morphic ensures that such agreement provides that:

(a) Morphic may freely assign such agreement to AbbVie upon AbbVie's exercise of the applicable Option without further consideration;

(b) (i) Morphic may terminate such agreement for any reason in its sole discretion upon no more than [***] prior written notice, (ii) such agreement may otherwise be terminated with no more than [***] prior written notice or (iii) Morphic may freely source supply of such Research Product and the components thereof from other suppliers in its sole discretion; and

(c) In accordance with Section 5.3.1, upon request by Morphic, such Third Party manufacturer shall provide Morphic or its designee, either directly or through Morphic, with all reasonable assistance required in order to transfer to Morphic or such designee any Manufacturing Process or related technology used in the Manufacture of such Research Product, including all materials, data, methods, processes, documentation and other Information related thereto.

2.3.3. AbbVie hereby covenants and agrees that, on a Research Product-by-Research Product basis, it shall assume each Qualified CMO Agreement upon exercise of its Option for the applicable Research Product; provided that, AbbVie shall not be responsible for any payments or obligations arising, or any Losses with respect to activities occurring, prior to the date of, or as a result of or in connection with, such assumption except that AbbVie shall reimburse in full Morphic within [***] following assumption of each such Qualified CMO Agreement for all reasonable and verifiable costs incurred with respect to the Manufacturing of the Research Product intended for use for clinical activity in a clinical trial that is subsequent to the healthy volunteer Phase I Clinical Trial to the extent (a) AbbVie agrees in advance of such assumption to reimburse such costs in the event it exercises the applicable Option, such agreement not to be unreasonably withheld, conditioned or delayed or (b) such Research Product is actually used by or on behalf of AbbVie in the performance of such clinical activity.

2.4. Performance of Development Activities.

2.4.1. General. Morphic shall perform all of its Development activities hereunder, including any ROFN Activities, in good scientific manner and in compliance with all Applicable Law. In addition, with respect to each Research Target Program, Morphic shall perform the Development activities with respect thereto under the direction and supervision of the JGC and in accordance with the Research Plan and allocate sufficient time, effort, equipment, and skilled personnel to complete such Development activities in accordance with the Research Plan.

2.4.2. Subcontracting. Each Party shall have the right to subcontract its Development and Manufacturing activities under the Research Plan to a Third Party to the extent expressly provided for in the Research Plan or with the approval of the JGC and Morphic shall have the right to subcontract any ROFN Activities; provided, that (a) the subcontracting Party

shall oversee the performance by its subcontractors of the subcontracted activities in a manner that would be reasonably expected to result in their timely and successful completion and (b) any agreement pursuant to which the subcontracting Party engages a subcontractor must (i) be consistent with this Agreement and (ii) contain terms obligating such subcontractor to (A) comply with confidentiality provisions that are at least as restrictive as those set forth in ARTICLE 9, (B) provide the other Party with substantially the same rights with respect to any Information, Patents or other intellectual property arising from performance of the subcontracted activities as the other Party would have under this Agreement if such Information, Patents and other intellectual property had arisen from the performance of such activities by the subcontracting Party and (C) permit the other Party the right of audit and inspection substantially similar to those provided to the other Party under this Agreement. No such permitted subcontracting shall relieve the subcontracting Party of any obligation hereunder and any act or omission of its subcontractors shall constitute the act or omission of the subcontracting Party for all purposes hereunder.

2.4.3. Key Personnel. From time to time, AbbVie and Morphic shall meet to identify the scientific and technical personnel of Morphic or its Affiliates considered by both AbbVie and Morphic to be critical for Morphic's conduct of the Development activities under the Research Plan (the "**Key Personnel**"). To the extent consistent with Applicable Law, Morphic shall use commercially reasonable efforts to keep available the services of the Key Personnel for the duration of each Research Target Program. Without limiting the generality of the foregoing, Morphic shall not materially reduce the commitment of any Key Personnel to any Research Target Program without the prior written consent of AbbVie, such consent not to be unreasonably conditioned, withheld or delayed. If any Key Personnel are no longer employed by Morphic or are otherwise incapable of performing their obligations under this Agreement due to a disability for a period of not less than [***] days, the Parties shall meet and discuss in good faith how best to proceed. Notwithstanding the foregoing, Morphic shall continue to be responsible for performing its Development activities hereunder, and any consent by AbbVie pursuant to this Section 2.4.3 shall not be deemed to be a waiver of any failure of Morphic to conduct such Development activities under this Agreement.

2.4.4. Development Records. Morphic shall, and shall cause its Affiliates and subcontractors to, maintain, in good scientific manner, complete and accurate books and records pertaining to its Development activities hereunder, including activities under the Research Plan and any ROFN Activities, in sufficient detail to verify compliance with its obligations under this Agreement and which books and records shall (a) be appropriate for patent and regulatory purposes, (b) be kept and maintained in compliance with Applicable Law, (c) properly reflect all work done and results achieved in the performance of its activities hereunder and (d) not include or be commingled with records of activities outside the scope of this Agreement. Morphic shall, or shall cause its Affiliates or subcontractors, as applicable, to retain such books and records for at least [***] after the expiration or termination of this Agreement in its entirety or for such longer period as may be required by Applicable Law. AbbVie shall have the right, during normal business hours and upon reasonable notice, to inspect and copy all records maintained pursuant to this Section 2.4.4; provided, that AbbVie shall maintain any

Confidential Information of Morphic in such records in confidence in accordance with ARTICLE 9.

2.4.5. IND Preparation. With respect to each ROFN Target, unless and until AbbVie exercises a ROFN for such ROFN Target, Morphic shall have the sole right to prepare, obtain and maintain INDs for products Directed to such ROFN Target and to conduct communications with the applicable Regulatory Authorities with respect to such INDs.

2.4.6. Third Party IP. If Morphic at any time reasonably believes that a license or other rights with respect to any Information, invention or material (including any Patent or other intellectual property right with respect thereto) could be necessary or useful for the conduct of the Research Plan or to Develop, Manufacture or Commercialize one (1) or more Research Products, then, subject to Section 10.3.1:

(a) with respect to any license or other agreement with respect to any Information, invention or material (including any Patent or other intellectual property right with respect thereto) that relates to technology used by or on behalf of Morphic or any of its Affiliates to identify, characterize, or stabilize a Research Target or model, generate, design or optimize any Research Product Directed thereto or that is otherwise necessary or useful for the conduct of the Research Plan (except for (i) Third Party screening libraries that may be required to generate a Lead Research Product Directed to [***] or any Backup Research Product and (ii) Third Party Patents claiming [***] or any three dimensional structures thereof) ("**Morphic Platform IP**"), Morphic shall be entitled to enter into such license or other agreement without AbbVie's consent; provided that AbbVie shall not be responsible for any payment thereunder, including any reach through obligation; and

(b) with respect to any license or other agreement with respect to any Information, invention or material (including any Patent or other intellectual property right with respect thereto) (other than Morphic Platform IP) that is necessary or useful for the conduct of the Research Plan or to Develop, Manufacture or Commercialize one (1) or more Research Products (including, for the avoidance of doubt, any (i) Third Party screening libraries that may be required to generate a Lead Research Product Directed to [***] or any Backup Research Product and (ii) Third Party Patents claiming [***] or any three dimensional structures thereof), Morphic shall not, and shall cause its Affiliates not to, enter into such license or other agreement without AbbVie's prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed with respect to licenses or other agreements entered into with respect to a Research Target (or Research Products Directed thereto) prior to AbbVie's exercise of the Option for such Research Target (and which consent, for clarity, may be withheld by AbbVie in its sole discretion after AbbVie's exercise of the Option for such Research Target). Upon AbbVie's request, Morphic shall promptly provide to AbbVie any information related to such Information, invention or material (including any Patent or other intellectual property right with respect thereto) and the applicable Research Target and any affected Research Products. If AbbVie consents to any such license or other agreement, then, following AbbVie's exercise of its Option with respect to a Research Target, subject to Section 7.5, Section 7.14 and Section 11.2, AbbVie shall be responsible for any payment thereunder arising after such Option exercise to the extent reasonably allocable to AbbVie's or its Affiliates' Exploitation of a Licensed

Product Directed to such Research Target in accordance with the terms to which AbbVie consented in accordance with this Section 2.4.6(b).

2.5. Information and Reports.

2.5.1. Development Reports. Within [***] following the end of each Calendar Quarter, Morphic shall provide to the JGC and AbbVie (a) a detailed written report regarding Morphic's (and its Affiliates', if applicable) Development activities under the Research Plan that shall contain sufficient detail to enable the JGC to assess Morphic's compliance with the Research Plan and (b) access to or copies of written reports of Development activities under the Research Plan as may be prepared by or on behalf of Morphic or any of its Affiliates.

2.5.2. Additional Information Exchange. In addition to the reports provided pursuant to Section 2.5.1, Morphic promptly shall provide to AbbVie any Information Controlled by Morphic or any of its Affiliates (including all research, analyses and other Information, copies of all correspondence to and from any Regulatory Authority, and copies of any Regulatory Documentation) related to the Research Targets or Research Products that may be requested by AbbVie from time to time and that has not already been provided to AbbVie hereunder.

2.5.3. ROFN Meetings. Upon AbbVie's request during the ROFN Period with respect to a ROFN Target, the Parties shall meet and discuss the progress and results of Development of compounds Directed to such ROFN Target, and Morphic shall provide AbbVie any Information with respect to such ROFN Target reasonably requested by AbbVie in connection therewith.

2.6. Data Packages.

2.6.1. With respect to each Research Target, within [***] after the completion of the Development activities set forth in the Research Plan for such Research Target (or, if earlier, [***] prior to the end of the Option Period), Morphic shall deliver to AbbVie the Data Package for such Research Target and shall provide AbbVie with electronic access to all data generated in connection with the Development activities under the Research Plan with respect to such Research Target.

2.6.2. With respect to each Data Package for each Research Target, AbbVie shall have [***] after the date Morphic provides such Data Package in which to review such Data Package, and, if AbbVie believes in good faith that any of the data or information required to be included in such Data Package is missing, then AbbVie shall have the right to request in writing that Morphic update such Data Package to include any such missing information that is in the possession or control of Morphic or any of its Affiliates (without performing additional research) and deliver a revised Data Package within [***] after the receipt of such request from AbbVie.

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

2.6.3. With respect to each Research Target, in addition to the Data Package for such Research Target, during the Option Period for such Research Target, Morphic promptly shall provide to AbbVie (a) any additional Information related to the Research Products Directed to such Research Target that is in the possession or control of Morphic or any of its Affiliates and (b) quantities of such Research Products Directed to such Research Targets, in each case ((a) and (b)), as reasonably requested by AbbVie and that are necessary or reasonably useful for AbbVie to evaluate the Data Package for such Research Target or in order to make an informed decision regarding whether to exercise its Option for such Research Target. If AbbVie requests any such Information at least [***] before the expiry of the Option Period for such Research Target and Morphic does not provide AbbVie such Information within [***] after such request, then such Option Period shall be extended by a period equal to the delay in Morphic providing such Information to AbbVie.

2.6.4. For purposes of Section 2.6.3, "additional Information" shall be Information then in existence, the provision of which shall not require the conduct by Morphic or any of its Affiliates of any additional Development activities or any additional analyses other than additional analyses that AbbVie is unable to conduct and that Morphic can reasonably conduct within [***] after AbbVie's request with respect thereto.

2.7. Expenses. Morphic shall be responsible for and shall bear all costs and expenses necessary to perform its obligations under this ARTICLE 2.

ARTICLE 3
EXCLUSIVE OPTIONS

3.1. Options.

3.1.1. Option Grant. Subject to the terms and conditions of this Article 3, with respect to each Research Target, Morphic hereby grants to AbbVie a fully paid-up, irrevocable and exclusive option to obtain an exclusive right and license (even as to Morphic and its Affiliates) to Exploit each Licensed Compound Directed to such Research Target and the corresponding Licensed Products with respect thereto under Section 4.1.1(b) (each, an "**Option**").

3.1.2. Option Exercise. AbbVie shall have the right to exercise each Option at any time during the applicable Option Period by giving Morphic written notice of exercise specifying the applicable Research Target (the "**Exercise Notice**"). Subject to the following sentence, with respect to each Option for which AbbVie delivers Morphic an Exercise Notice, AbbVie shall pay to Morphic a one-time payment of Twenty Million Dollars ($20,000,000) within [***] after the Option Effective Date for such Option. If, [***] prior to the fifth (5th) anniversary of the Effective Date (such five (5)- year period to be extended in accordance with the definition of "Option Period"), Morphic has not completed the Key Development Activities with respect to each Research Target, then (a) Morphic shall notify AbbVie in writing of such circumstances on such date and (b) AbbVie shall have the right to exercise its Option within [***] after the later of (i) the end of the Option Period and (ii) the

Acceptance Date for the Data Package with respect to each such Research Target, without the obligation to make any payment to Morphic with respect thereto under this Section 3.1.2.

3.1.3. Licensed Compound and Licensed Product Responsibility. With respect to each Option for which AbbVie delivers Morphic an Exercise Notice, from and after the Option Effective Date for such Option, AbbVie shall have the sole right to Exploit the Licensed Compounds Directed to the applicable Research Target and the corresponding Licensed Products; provided, that if as of the Option Effective Date for an Option, Morphic has not completed all Key Development Activities with respect to the applicable Research Target, or the Acceptance Date has not occurred with respect to the applicable Data Package, Morphic shall continue to perform such obligations unless and until AbbVie requests in writing that Morphic cease performing any such activities under the Research Plan for such Research Target.

3.1.4. Additional Morphic Obligations. With respect to each Option for which AbbVie delivers to Morphic an Exercise Notice, and without additional consideration to Morphic:

(a) subject to Section 2.3.3, upon AbbVie's request, Morphic shall, and hereby does (and, in the case of agreements to which an Affiliate or (sub)licensee is a party, shall cause such Affiliate or (sub)licensee to), assign to AbbVie, and AbbVie shall and hereby does assume, any agreements relating to the Development or Manufacture of the Licensed Compounds Directed to the applicable Research Target and the corresponding Licensed Products to which Morphic or any of its Affiliates or any (sub)licensees is a party (including each Qualified CMO Agreement and any agreement with any Third Party manufacturer with respect to any applicable Licensed Product); provided, that, to the extent that the assignment by Morphic (or its Affiliate or (sub)licensee, as applicable) of any agreement pursuant to this Section 3.1.4(a) requires any notice to, or consent of, the relevant Third Party counterparty to such agreement, or requires the separation of such agreement into an agreement that is retained by Morphic (or its Affiliate or (sub)licensee, as applicable) and an agreement that is assignable to (or entered into by) AbbVie, as applicable, (i) Morphic shall (or shall cause its Affiliate or (sub)licensee, as applicable, to) give such notice and (ii) the Parties shall reasonably cooperate to (A) obtain such consent or (B) at the request and with the reasonable assistance of AbbVie, negotiate such separation, in each case ((i) and (ii)), as soon as practicable; provided, that, with respect to any agreement to be assigned by Morphic (or its Affiliate or (sub)licensee, as applicable) pursuant to this Section 3.1.4(a), neither Morphic nor any of its Affiliates shall be required to make any payments or agree to any material undertakings in connection therewith. Until such notice is given, such consent is obtained or such separation is executed, the Parties will reasonably cooperate to provide to AbbVie the benefits under such agreement to the extent applicable to the rights to be assigned to AbbVie.

(b) Morphic shall transfer to AbbVie (i) copies of all data, reports, records, materials and other information arising out of the activities under the Research Plan for the applicable Research Target or any Manufacturing activities with respect thereto, including all non-clinical data relating to the Licensed Compounds Directed to the applicable Research Target and the corresponding Licensed Products and (ii) the file wrappers and other

documents and materials relating to the prosecution, defense, maintenance, validity and enforceability of the Included Target Patents with respect to the applicable Research Target.

(c) Morphic and AbbVie shall duly execute the quality agreement negotiated by the Parties for Licensed Compounds Directed to the applicable Research Target pursuant to the Research Plan.

(d) subject to Section 2.3.3, Morphic shall transfer to AbbVie all of its inventory of the Licensed Compounds Directed to the applicable Research Target and the corresponding Licensed Products produced in accordance with the Research Plan and Morphic shall deliver such inventory to AbbVie FCA basis (as defined in Incoterms 2010) at a location designated by AbbVie. Morphic represents and warrants that at the time of delivery with respect to any such inventory delivered or released by Morphic to AbbVie, and will provide to AbbVie, at the time of delivery, copies of all applicable Third Party supplier certifications with respect to any such inventory delivered or released by any Third Party supplier to AbbVie, that each such Licensed Compound or Licensed Product, as applicable, (i) will have been Manufactured in accordance with Applicable Law, including current good manufacturing practices, (ii) will not be adulterated or misbranded under the FFDCA and may be introduced into interstate commerce pursuant to the FFDCA, (iii) will comply with the applicable specifications with respect thereto, and (iv) will comply with the applicable quality agreement as provided in Section 3.1.4(c).

(e) Morphic shall, and hereby does, assign to AbbVie all of its right, title, and interest in and to all Regulatory Documentation relating to the Licensed Compounds Directed to the applicable Research Target and the corresponding Licensed Products to which such Option applies, and Morphic shall deliver such Regulatory Documentation to AbbVie within [***] after the Option Effective Date for such Option.

(f) without limiting Section 3.1.4(b)(ii), Morphic shall assist and cooperate with AbbVie, as AbbVie may reasonably request in the transition of prosecution, maintenance, enforcement and defense of the Included Target Patents with respect to the applicable Research Target from Morphic to AbbVie.

(g) Morphic shall duly execute and deliver, or cause to be duly executed and delivered, such instruments and shall do and cause to be done such acts and things, including the filing of such assignments, agreements, documents and instruments, as may be necessary under or as AbbVie may reasonably request in connection with or to carry out more effectively the purpose of or to better assure and confirm unto AbbVie its rights to Exploit the Licensed Compounds Directed to the applicable Research Target and the corresponding Licensed Products in accordance with this Agreement.

Notwithstanding anything to the contrary, Morphic shall have no obligation to transfer methods of stabilizing specific integrin conformations with molecular fragments for identifying potential compound hits with respect to a Research Target or ROFN Target or any Included Target.

3.1.5. Non-Exercise of Option. With respect to each Research Target, if AbbVie does not provide Morphic an Exercise Notice on or before the expiration of the applicable Option Period for such Research Target (or as otherwise provided in Section 3.1.2) or notifies Morphic in writing prior to the expiration of such Option Period that AbbVie will not be exercising its Option for such Research Target, then the Option with respect to such Research Target shall terminate immediately and Morphic shall have the right to Exploit products Directed to such Research Target (including granting rights with respect thereto to Third Parties) without any further obligation to AbbVie under this Section 3.1.

3.2. Right of First Negotiation for ROFN Targets.

3.2.1. Grant of ROFN. With respect to each ROFN Target, Morphic hereby grants to AbbVie a fully-paid up, irrevocable and exclusive one-time (except as provided in Section 3.2.3(b)) right of first negotiation regarding an amendment to this Agreement to provide for the amount of the upfront license fee, milestones and royalties payable with respect to the Licensed Compounds Directed to such ROFN Target and corresponding Licensed Products or other consideration as may be mutually agreed by the Parties (a "**ROFN**").

3.2.2. ROFN Target [***].

(a) With respect to each ROFN Target, Morphic shall deliver to AbbVie the [***] with respect to such ROFN Target and shall provide AbbVie with electronic access to all data generated in connection with the Development activities relating to such ROFN Target within [***] after the earlier of (i) AbbVie providing Morphic with a written request for [***] with respect to such ROFN Target and (ii) Morphic's delivery to AbbVie of the Clinical Study Report for a healthy volunteer Phase I Clinical Trial for a product Directed to such ROFN Target. Notwithstanding the foregoing, if at any time during the ROFN Period for a ROFN Target, Morphic receives an unsolicited offer from a Third Party to acquire (whether by license, option, acquisition or otherwise) commercialization rights to such ROFN Target and corresponding products and Morphic wishes to pursue negotiations with such Third Party (such offer, a "**Third Party Offer**"), then Morphic shall within [***] of such notice to AbbVie deliver to AbbVie the Data Package with respect to such ROFN Target and provide AbbVie with electronic access to all data generated in connection with the Development activities relating to such ROFN Target; provided that, subject to the restrictions on Confidential Information set forth in ARTICLE 9, informational presentations with respect to ROFN Targets and products directed thereto (x) in connection with scientific publications or conferences, investor meetings (whether actual or potential) and the like or (y) to individual companies to solicit scientific input on a program or discuss Morphic and its programs generally, in each case ((x) and (y)), shall not be considered acts of solicitation.

(b) With respect to each [***] for a ROFN Target, AbbVie shall have [***] after the date Morphic provides [***] in which to review [***], and, if AbbVie believes in good faith that any of the data or information required to be included in [***] is missing, then AbbVie shall have the right to request in writing that Morphic update [***] to include any such missing information that is in the possession or control of Morphic or any of its

Affiliates (without performing additional research) and deliver [***] within [***] after the receipt of such request from AbbVie.

(c) In addition to [***] for each ROFN Target, Morphic shall promptly (but in no event later than [***] following AbbVie's reasonable request) provide to AbbVie (i) any additional Information related to the products Directed to such ROFN Target that is in the possession or control of Morphic or any of its Affiliates and (ii) quantities of such products Directed to such ROFN Targets, in each case ((i) and (ii)), as reasonably requested by AbbVie and that are necessary or reasonably useful for AbbVie to evaluate [***] for such ROFN Target or in order to make an informed decision regarding whether to exercise its ROFN for such ROFN Target.

(d) For purposes of Section 3.2.2(c), "additional Information" shall be Information then in existence, the provision of which shall not require the conduct by Morphic or any of its Affiliates of any additional Development activities or any additional analyses other than additional analyses that AbbVie is unable to conduct and that Morphic can reasonably conduct within [***] after AbbVie's request with respect thereto.

3.2.3. ROFN Exercise.

(a) With respect to each ROFN Target, subject to clause (b), AbbVie shall have the right to exercise the ROFN with respect to such ROFN Target at any time during the ROFN Period for such ROFN Target by giving Morphic written notice of such exercise ("**ROFN Notice**"). If AbbVie provides a ROFN Notice for a ROFN Target before the end of the ROFN Period for such ROFN Target, then the Parties shall negotiate in good faith an amendment to this Agreement to provide for the amount of the upfront license fee, milestones and royalties payable with respect to the Licensed Compounds Directed to such ROFN Target and corresponding Licensed Products or other consideration as may be mutually agreed by the Parties (the "**ROFN Terms**") for a period of [***] (the "**ROFN Negotiation Period**").

(b) In the case of a Third Party Offer, if AbbVie and Morphic are unable to agree on ROFN Terms for the ROFN Target within the applicable ROFN Negotiation Period, then Morphic would be free to accept any offer from, and enter into any agreement with, the Third Party that made the Third Party Offer for such ROFN Target and corresponding products; provided that if Morphic has not entered into a definitive agreement with such Third Party on or prior to the time a Clinical Study Report for a healthy volunteer Phase I Clinical Trial for the applicable ROFN Target is available, then, unless prohibited by a written agreement with the applicable Third Party, Morphic shall provide AbbVie with an [***], and AbbVie shall have an additional [***] period after the delivery of [***] in which it can exercise the ROFN with respect to such ROFN Target by delivering a ROFN Notice to Morphic. If AbbVie provides a ROFN Notice for such ROFN Target prior to the end of such additional [***] period, then the Parties shall negotiate in good faith and on an exclusive basis an amendment to this Agreement to provide for ROFN Terms with respect to the Licensed Compounds Directed to the applicable ROFN Target and corresponding Licensed Products for a period of [***] after the delivery of the [***] in accordance with this Section 3.2.3(b) (and the ROFN Negotiation Period shall continue until the end of such [***] period); provided that, to the

extent Morphic is still engaged in negotiations with such Third Party regarding the Third Party Offer, Morphic shall be free to negotiate and enter into an agreement with respect to such Third Party Offer with such Third Party at any time prior to the end of such [***] period.

3.2.4. ROFN Outcome.

(a) If the Parties agree in writing in their respective sole discretion on the ROFN Terms for a ROFN Target, then (i) if AbbVie determines that an HSR Filing is required with respect thereto, the Parties shall comply with the HSR Filing obligations set forth in Section 13.15.1, (ii) upon the Inclusion Date for such ROFN Target, this Agreement shall be deemed to automatically incorporate such ROFN Terms and (iii) from and after such Inclusion Date, AbbVie shall have the sole right to conduct, or have conducted, Development and Commercialization activities relating to the Licensed Compounds Directed to such ROFN Target and the corresponding Licensed Products. Notwithstanding anything to the contrary contained in this Section 3.2, if (x) AbbVie does not provide Morphic a ROFN Notice for a ROFN Target on or before the expiration of the ROFN Period for such ROFN Target or (y) the Parties do not agree on the ROFN Terms for a ROFN Target within the ROFN Negotiation Period for such ROFN Target, then (in either case (x) or (y)), Morphic shall have the right to Exploit products Directed to such ROFN Target (including granting rights with respect thereto to Third Parties) without any further obligation to AbbVie (except as provided in Section 3.2.3(b)).

(b) If AbbVie determines that an HSR Filing is required with respect to the ROFN Terms agreed by the Parties for a ROFN Target, AbbVie's rights to such ROFN Target under this Agreement shall terminate (i) upon notice given by AbbVie to Morphic if AbbVie receives a Second Request with respect to the HSR Filing with respect to such ROFN Terms and such ROFN Target and AbbVie delivers notice of termination within [***] after receipt of such Second Request, or (ii) upon notice given by one Party to the other Party if HSR Clearance with respect to such ROFN Terms and such ROFN Target has not been obtained within [***] after the date on which such HSR Filing is made and such Party delivers notice of termination within [***] period; provided, however, that if as of the end of such one [***] AbbVie is pursuing HSR Clearance with respect to such ROFN Terms and such ROFN Target (whether by responding to a Second Request or through litigation or any other proceeding, whether judicial or administrative in nature (including an HSR Proceeding)) and AbbVie has provided written notice thereof to Morphic during such [***] period, then Morphic shall not then have the right to terminate such ROFN rights pursuant to this clause (ii) but may terminate such ROFN rights upon written notice to AbbVie if such HSR Clearance has not been obtained within [***] after the date on which such HSR Filing is made; provided, that Morphic gives AbbVie written notice thereof within [***].

3.2.5. Additional Morphic Obligations. With respect to each ROFN Target for which the Parties agree on the ROFN Terms with respect thereto and, if AbbVie determines an HSR Filing is required with respect thereto, HSR Clearance is obtained with respect to such ROFN Target, without additional consideration to Morphic:

(a) Upon AbbVie's request, Morphic shall, and hereby does (and, in the case of agreements to which an Affiliate or (sub)licensee is a party, shall cause such

Affiliate or (sub)licensee to), assign to AbbVie, and AbbVie shall and hereby does assume, any agreements relating to the Development or Manufacture of the Licensed Compounds Directed to the applicable ROFN Target and the corresponding Licensed Products to which Morphic or any of its Affiliates or any (sub)licensees is a party (including any agreement with any Third Party manufacturer with respect to any applicable Licensed Product); provided, that, to the extent that the assignment by Morphic (or its Affiliate or (sub)licensee, as applicable) of any agreement pursuant to this Section 3.2.5 requires any notice to, or consent of, the relevant Third Party counterparty to such agreement, or requires the separation of such agreement into an agreement that is retained by Morphic (or its Affiliate or (sub)licensee, as applicable) and an agreement that is assignable to (or entered into by) AbbVie, as applicable, (i) Morphic (or shall cause its Affiliate or (sub)licensee, as applicable, to) shall give such notice and (ii) the Parties shall reasonably cooperate to (A) obtain such consent or (B) at the request and with the reasonable assistance of AbbVie, negotiate such separation, in each case ((i) and (ii)), as soon as practicable; provided, that, with respect to any agreement to be assigned by Morphic (or its Affiliate or (sub)licensee, as applicable) pursuant to this Section 3.2.5, neither Morphic nor any of its Affiliates shall be required to make any payments in connection therewith, and Morphic shall provide reasonable assistance in connection therewith (provided that AbbVie shall refund Morphic for its reasonable and verifiable out-of-pocket costs incurred with respect to such assistance). Until such notice is given, such consent is obtained or such separation is executed, the Parties will reasonably cooperate to provide to AbbVie the benefits under such agreement to the extent applicable to the rights to be assigned to AbbVie.

(b) Morphic shall transfer to AbbVie (i) copies of all data, reports, records, materials and other information arising out of the activities relating to the applicable ROFN Target or any Manufacturing activities with respect thereto, including all non-clinical data relating to the Licensed Compounds Directed to the applicable ROFN Target and the corresponding Licensed Products and (ii) the file wrappers and other documents and materials relating to the prosecution, defense, maintenance, validity and enforceability of the Included Target Patents with respect to the applicable ROFN Target.

(c) Morphic and AbbVie shall duly execute the quality agreement negotiated by the Parties for Licensed Compounds Directed to the applicable ROFN Target.

(d) Subject to Section 2.3.3, Morphic shall transfer to AbbVie all of its inventory of the Licensed Compounds Directed to the applicable ROFN Target and the corresponding Licensed Products and Morphic shall deliver such inventory to AbbVie FCA basis (as defined in Incoterms 2010) at a location designated by AbbVie. Morphic represents and warrants that at the time of delivery with respect to any such inventory delivered or released by Morphic to AbbVie, and will provide to AbbVie, at the time of delivery, copies of all applicable Third Party supplier certifications with respect to any such inventory delivered or released by any Third Party supplier to AbbVie, that each such Licensed Compound or Licensed Product, as applicable, (i) will have been Manufactured in accordance with Applicable Law, including current good manufacturing practices, (ii) will not be adulterated or misbranded under the FFDCA and may be introduced into interstate commerce pursuant to the FFDCA, (iii) will

comply with the applicable specifications with respect thereto, and (iv) will comply with the applicable quality agreement as provided in Section 3.2.5(c).

(e) Morphic shall, and hereby does, assign to AbbVie all of its right, title, and interest in and to all Regulatory Documentation (including all Regulatory Approvals) relating to the Licensed Compounds Directed to the applicable ROFN Target and the corresponding Licensed Products to which such ROFN applies, and Morphic shall deliver such Regulatory Documentation to AbbVie within [***] after the Inclusion Date for such ROFN Target.

(f) Without limiting Section 3.2.5(b)(ii) but subject to ARTICLE 8, Morphic shall assist and cooperate with AbbVie, as AbbVie may reasonably request in the transition of prosecution, maintenance, enforcement and defense of the Morphic Patents with respect to the applicable ROFN Target from Morphic to AbbVie.

(g) Morphic shall duly execute and deliver, or cause to be duly executed and delivered, such instruments and shall do and cause to be done such acts and things, including the filing of such assignments, agreements, documents and instruments, as may be necessary under or as AbbVie may reasonably request in connection with or to carry out more effectively the purpose of or to better assure and confirm unto AbbVie its rights to Exploit the Licensed Compounds Directed to the applicable ROFN Target and the corresponding Licensed Products in accordance with this Agreement.

ARTICLE 4
GRANT OF RIGHTS; EXCLUSIVITY

4.1. Grants to AbbVie and Morphic.

4.1.1. Subject to Section 4.2, Section 4.3 and Section 13.3.2, Morphic (on behalf of itself and its Affiliates) hereby grants to AbbVie and its Affiliates:

(a) during the Option Period, a co-exclusive (with Morphic and its Affiliates), royalty-free license (or sublicense) under the Morphic IP and Morphic's interests in the Joint IP, if any, to perform AbbVie's activities under the Research Plan; and

(b) with respect to each Included Target, effective upon the Inclusion Date for such Included Target, an exclusive (even as to Morphic and its Affiliates) (a) royalty-bearing (in accordance with Section 7.3) license (or sublicense), with the right to grant sublicenses in accordance with Section 4.2, under the Morphic IP and Morphic's interests in the Joint IP, if any, and (b) an exclusive right of reference, with the right to grant further rights of reference in accordance with Section 4.2, to any Regulatory Approval Controlled by Morphic or any of its Affiliates that is referenced in (but not included in) any Regulatory Documentation transferred to AbbVie under this Agreement or otherwise necessary or reasonably useful to Exploit any Licensed Compound Directed to such Included Target and any corresponding Licensed Products, in each case ((a) and (b)), to Exploit all Licensed Compounds Directed to such Included Target and all corresponding Licensed Products in the Field in the Territory; and

(c) an exclusive, royalty-free license (or sublicense) under the Morphic IP and Morphic's interests in the Joint IP, if any, to exercise AbbVie's rights under ARTICLE 8, including to enforce and defend the Morphic Patents and Joint Patents and to grant licenses to Third Parties in connection therewith; and

(d) subject to Section 9.4, with respect to each Included Target, effective upon the Inclusion Date for such Included Target, a non-exclusive license, with the right to grant sublicenses in accordance with Section 4.2, to use Morphic's Corporate Names solely as required to Exploit Licensed Compounds Directed to such Included Target and any corresponding Licensed Products in the Field in the Territory and for no other purpose.

4.1.2. Subject to Section 4.2 and Section 4.3, AbbVie (on behalf of itself and its Affiliates) hereby grants to Morphic and its Affiliates, during the performance of Morphic's Development activities under the Research Plan, a non-exclusive, royalty-free license, with the right to grant sublicenses in accordance with Section 4.2 under the AbbVie Patents solely for purposes of performing Morphic's obligations under the Research Plan in accordance with this Agreement.

4.2. Sublicenses. Each Party shall have the right to grant sublicenses (or further rights of reference), through multiple tiers of sublicensees, under the licenses and rights of reference granted in Section 4.1, to its Affiliates and Third Parties; provided, that any such sublicenses shall be consistent with the terms and conditions of this Agreement. Each such sublicense granted by any Party shall be subject to and consistent with the terms and conditions of this Agreement, and each Party shall provide the other Party with a copy of any exclusive sublicense; provided that the financial and any other terms of any such sublicense not pertinent to an understanding of the other Party's obligations or benefits under this Agreement may be redacted.

4.3. No Implied Licenses. Except as expressly provided herein, neither Party grants any other right or license, including any rights or licenses to the Morphic IP, Morphic's interests in the Joint IP, if any, the Morphic Corporate Names or any other Patent or intellectual property rights not otherwise expressly granted herein.

4.4. Confirmatory Patent License. Morphic shall, and shall cause its Affiliates to, if requested to do so by AbbVie, immediately enter into confirmatory license agreements in such form as may be reasonably requested by AbbVie for purposes of recording the licenses granted under Section 4.1 with such patent offices in the Territory as AbbVie considers appropriate. Until the execution of any such confirmatory licenses, so far as may be legally possible, Morphic and AbbVie shall have the same rights in respect of the Morphic IP and Morphic's interests in the Joint IP, if any, and be under the same obligations to each other in all respects as if the said confirmatory licenses had been executed.

4.5. Exclusivity.

4.5.1. Morphic's Exclusivity Obligations. From and after the Execution Date, Morphic shall not, and shall cause its Affiliates not to:

(a) with respect to each Research Target, (i) Exploit or (ii) license, authorize, appoint, or otherwise assist or enable any Third Party to, Exploit, in either case ((i) or (ii)), any product Directed to such Research Target until (A) if AbbVie does not exercise the Option for such Research Target, the first day after the expiration of the applicable Option Period (or, if applicable, the later date provided in the last sentence of Section 3.1.2) and (B) if AbbVie exercises such Option, the first day after the end of the Term; and

(b) with respect to each ROFN Target, (x) subject to clause (y), license, authorize, appoint, or otherwise assist or enable any Third Party to, Exploit, any product Directed to such ROFN Target until the first day after the expiration of the applicable ROFN Negotiation Period (or ROFN Period if AbbVie does not provide a ROFN Notice for such ROFN Target during the applicable ROFN Period) and (y) if the Parties agree on ROFN Terms for such ROFN Target and, if AbbVie determines an HSR Filing is required with respect thereto, HSR Clearance is obtained with respect to such ROFN Target, (i) Exploit or (ii) license, authorize, appoint, or otherwise assist or enable any Third Party to, Exploit, in either case ((i) or (ii)), any product Directed to such ROFN Target from the date of such agreement until the first day after the end of the Term.

Notwithstanding the foregoing, the restrictions set forth in this Section 4.5.1 shall not apply to (1) Development activities conducted under this Agreement in accordance with the Research Plan and (2) Morphic or its Affiliates determining whether any pharmaceutical product or other molecule is or is not Directed to a Research Target or Included Target.

4.5.2. AbbVie's Exclusivity Obligations. With respect to each Included Target, from and after the Inclusion Date for such Included Target, except for AbbVie's Exploitation of Licensed Compounds and corresponding Licensed Products under this Agreement, AbbVie shall not, and shall cause its Affiliates not to, (a) Exploit or (b) license, authorize, appoint, or otherwise assist or enable any Third Party to Exploit, in either case ((a) or (b)), any small molecule antagonist Directed to such Included Target.

Notwithstanding the foregoing, the restrictions set forth in this Section 4.5.2 shall not apply to AbbVie or its Affiliates (i) Exploiting a Competing Product pursuant to [***] and such Exploitation shall not be a violation of this Section 4.5.2 and (ii) determining whether any pharmaceutical product or other molecule is or is not Directed to a Research Target or Included Target.

4.5.3. Exceptions. Subject to the remainder of this Section 4.5.3, if during the Term, a Party (the "**Transaction Party**") or any of its Affiliates merges or consolidates with, or otherwise acquires, or is acquired by, a Third Party (including through a Change of Control) and such Third Party or any of its Affiliates prior to such transaction (collectively, the "**Pre-Existing Entities**") is Exploiting any Competing Product with respect to the Transaction Party, solely with respect to such existing Competing Product, as of the effective date of such transaction, the Transaction Party shall not be in violation of Section 4.5.1 or Section 4.5.2, as applicable, unless and until the Transaction Party fails to comply with the following terms and conditions:

(a) The Transaction Party shall ensure that all activities of the Pre-Existing Entities with respect to such Competing Product (i) do not use and are not based on or incorporate any Joint Know-How, Morphic Know-How or Product Information, (ii) are not claimed by or otherwise related to and do not incorporate or reference the Joint Patents, Morphic Patents or Product Information (or any Information or inventions disclosed in any of the foregoing) and (iii) are kept separate from the activities performed under or in connection with this Agreement.

(b) The Transaction Party shall establish reasonable internal safeguards designed to prevent any Joint Know-How, Morphic Know-How or Product Information from being disclosed to, or otherwise utilized by, any Pre-Existing Entity.

(c) Solely with respect to a transaction that does not constitute a Change of Control of a Party, if the Transaction Party acquires a Pre-Existing Entity that is Exploiting, as of the effective date of such transaction, any Competing Product as with respect to the Transaction Party (such transaction, a "**CP Acquisition Transaction**"), it shall notify the other Party in writing, within [***] after the consummation of the CP Acquisition Transaction, whether it intends to (i) [***], in which event the continued Exploitation by the Transaction Party of such Competing Product for a period of [***] following the consummation of the CP Acquisition Transaction shall not constitute a breach of Section 4.5.1 or Section 4.5.2, as applicable; provided that if the Transaction Party does not [***] within [***] following the consummation of the CP Acquisition Transaction, or if the Transaction Party fails to notify the other Party of the Acquisition Transaction within [***] after the consummation thereof, then the CP Acquisition Transaction shall constitute a breach of Section 4.5.1 or Section 4.5.2, as applicable; provided, further, that the foregoing obligation to [***] shall not apply (A) if the Competing Product is not one (1) of the two (2) most advanced products in the portfolio of the Pre-Existing Entity or (B) for any period of time during which such Competing Product is being Developed but has not received Regulatory Approval (provided that, upon receipt of Regulatory Approval with respect to such Competing Product, the provisions of this Section 4.5.3(c) shall apply as if such CP Acquisition Transaction occurred as of the date of such Regulatory Approval). [***] [***].

4.5.4. Acknowledgement. Each Party acknowledges and agrees that (a) this Section 4.5 has been negotiated by the Parties, (b) the geographical and time limitations on activities set forth in this Section 4.5 are reasonable, valid and necessary in light of the Parties' circumstances and necessary for the adequate protection of the activities under this Agreement and (c) the other Party would not have entered into this Agreement without the protection afforded it by this Section 4.5. If, notwithstanding the foregoing, a court of competent jurisdiction determines that the restrictions set forth in this Section 4.5 are too broad or otherwise unreasonable under Applicable Law, including with respect to duration, geographic scope or space, the court is hereby requested and authorized by the Parties to revise this Section 4.5 to include the maximum restrictions allowable under Applicable Law.

4.6. Morphic Change of Control. Morphic (or its successor) shall provide AbbVie with written notice of any Change of Control of Morphic within [***] after the earlier of the first public announcement of the execution of any agreement with respect to such Change of

Control and the closing date of such Change of Control. In the event of a Change of Control of Morphic, Morphic shall, and shall cause its successor and its and their Affiliates to, adopt reasonable procedures to be agreed upon in writing by the Parties to prevent disclosure of Confidential Information of AbbVie or any Information regarding the Research Target Program to Morphic's Affiliates other than to Persons that were Affiliates of Morphic prior to such Change of Control, except to the extent necessary for Morphic to perform its obligations hereunder.

ARTICLE 5
DEVELOPMENT AND COMMERCIALIZATION BY ABBVIE

5.1. In General. With respect to each Included Target, from and after the Inclusion Date for such Included Target, AbbVie (itself or through its Affiliates or its or their Sublicensees), at its sole cost and expense, shall, as between the Parties, have the sole right to further Develop, Manufacture, Commercialize and otherwise Exploit in the Territory the Licensed Compounds Directed to such Included Target and the corresponding Licensed Products.

5.2. Diligence. With respect to each Included Target from and after the Inclusion Date for such Included Target, AbbVie shall use Commercially Reasonable Efforts to obtain Regulatory Approval of and Commercialize one (1) Licensed Product that contains a Licensed Compound Directed to such Included Target in [***]. Morphic acknowledges and agrees that nothing in this Section 5.2 is intended, or shall be construed, to require AbbVie to Develop or Commercialize a specific Licensed Product. Except as set forth in this Section 5.2 (and, if applicable, Section 5.7.2), AbbVie shall have no other diligence obligations, express or implied, with respect to the Development, Commercialization or other Exploitation of the Licensed Products in the Territory.

5.3. Manufacturing Technology Transfer. With respect to each Technology Transfer Product, upon AbbVie's written request after the Inclusion Date for the Included Target to which such Technology Transfer Product is Directed, Morphic shall effect a full transfer to AbbVie or its designee (which designee may be an Affiliate or a Third Party manufacturer) of all Morphic Know-How and Joint Know-How relating to the then-current process for the Manufacture of such Technology Transfer Product (the "**Manufacturing Process**") and to implement the Manufacturing Process at facilities designated by AbbVie (such transfer and implementation, as more fully described in this Section 5.3, the "**Manufacturing Technology Transfer**"). To assist with the Manufacturing Technology Transfer, Morphic will make its personnel reasonably available to AbbVie during normal business hours for up to [***] FTE hours with respect to each Included Target (in each case, free of charge to AbbVie) to transfer and implement the Manufacturing Process under this Section 5.3. Thereafter, if requested by AbbVie, Morphic shall continue to perform such obligations; provided, that AbbVie will reimburse Morphic for its full-time equivalent (FTE) costs (for clarity, in excess of [***] FTE hours) and any reasonable and verifiable out-of-pocket costs incurred in providing such assistance.

5.3.1. With respect to each Manufacturing Technology Transfer, Morphic shall provide, and shall cause its Affiliates and Third Party manufacturers to provide, all reasonable assistance requested by AbbVie to enable AbbVie (or its Affiliate or designated Third Party manufacturer, as applicable) to implement the applicable Manufacturing Process at the facilities designated by AbbVie. If requested by AbbVie, such assistance shall include facilitating the entering into of agreements with applicable Third Party suppliers relating to the applicable Technology Transfer Products. Without limitation of the foregoing, in connection with each Manufacturing Technology Transfer:

(a) Morphic shall make available, and shall cause its Affiliates and Third Party manufacturers to make available, to AbbVie (or its Affiliate or designated Third Party manufacturer, as applicable) from time to time as AbbVie may request, all Manufacturing-related Information and materials relating to the applicable Manufacturing Process, including methods, processes and testing/characterization Information, and all documentation constituting material support, performance advice, shop practice, standard operating procedures, specifications as to materials to be used and control methods, that are reasonably necessary or useful to enable AbbVie (or its Affiliate or designated Third Party manufacturer, as applicable) to use and practice the applicable Manufacturing Process;

(b) Morphic shall assign to AbbVie all of its right, title and interest in and to, and shall deliver to AbbVie, all materials used by Morphic or any of its Affiliates or Third Party manufacturers to Manufacture, or relating thereto, the applicable Technology Transfer Products;

(c) Morphic shall cause all appropriate employees and representatives of Morphic and its Affiliates, and shall assist AbbVie in causing all appropriate employees and representatives of its Third Party manufacturers, to meet with employees or representatives of AbbVie (or its Affiliate or designated Third Party manufacturer, as applicable) at the applicable manufacturing facility at mutually convenient times to assist with the working up and use of the Manufacturing Process and with the training of the personnel of AbbVie (or its Affiliate or designated Third Party manufacturer, as applicable) to the extent reasonably necessary or useful to enable AbbVie (or its Affiliate or designated Third Party manufacturer, as applicable) to use and practice the Manufacturing Process;

(d) Without limiting the generality of Section 5.3.1(c), Morphic shall cause all appropriate analytical and quality control laboratory employees and representatives of Morphic and its Affiliates, and shall assist AbbVie in causing all appropriate analytical and quality control laboratory employees and representatives of its Third Party manufacturers, to meet with employees or representatives of AbbVie (or its Affiliate or designated Third Party manufacturer, as applicable) at the applicable manufacturing facility and make available all necessary equipment, at mutually convenient times, to support and execute the transfer of all applicable analytical methods and the validation thereof (including all applicable Morphic Know-How, Joint Know-How, methods, validation documents and other documentation, materials and sufficient supplies of all primary and other reference standards);

(e) Morphic shall, and shall cause its Affiliates to, take such steps, and shall assist AbbVie in causing its Third Party manufacturers to take such steps, as are reasonably necessary or useful to assist AbbVie (or its Affiliate or designated Third Party manufacturer, as applicable) in obtaining any necessary licenses, permits or approvals from Regulatory Authorities with respect to the Manufacture of the applicable Technology Transfer Products at the applicable facilities; and

(f) Morphic shall provide, and shall cause its Affiliates and Third Party manufacturers to provide, such other assistance as AbbVie (or its Affiliate or designated Third Party manufacturer, as applicable) may reasonably request to enable AbbVie (or its Affiliate or designated Third Party manufacturer, as applicable) to use and practice the Manufacturing Process and otherwise to Manufacture the applicable Technology Transfer Products.

5.3.2. Morphic shall promptly disclose to AbbVie (a) all modifications, enhancements and improvements to each Manufacturing Process transferred to AbbVie pursuant to this Section 5.3 and (b) any other Manufacturing process, in each case ((a) and (b)), conceived, discovered, developed or otherwise made or acquired (whether by license, option, acquisition or otherwise) or otherwise Controlled by or on behalf of Morphic or any of its Affiliates that is necessary or reasonably useful to Manufacture the Licensed Products. At AbbVie's request, Morphic shall provide AbbVie with reasonable assistance to enable AbbVie (or its Affiliate or designated Third Party manufacturer, as applicable) to implement such modifications, enhancements and improvements, and AbbVie shall reimburse Morphic for the reasonable internal costs and out-of-pocket costs incurred by Morphic with respect to such assistance.

5.4. Subcontracting; Distributors. AbbVie shall have the right to subcontract any of its Development, Manufacturing or Commercialization activities to a Third Party (including by appointing one (1) or more contract sales forces, co-promotion partners or Distributors); provided, that no such permitted subcontracting shall relieve AbbVie of any obligation hereunder (except to the extent satisfactorily performed by such subcontractor).

5.5. Development and Commercialization Reports. During the Royalty Term for a Licensed Product in any of [***], subject to Section 5.7.3(a), AbbVie shall provide a summary [***] to Morphic of its Development and Commercialization activities with respect to such Licensed Products conducted since the last such summary was provided hereunder (or since the Effective Date with respect to the first such summary) and the Parties shall meet [***] at a mutually agreed time and place to discuss such summary; provided that, in the event Morphic merges or consolidates with, or otherwise acquires, or is acquired by, a Third Party (including through a Change of Control) and thereafter Morphic or any of its Affiliates (including any Pre-Existing Entity) Exploits a Competing Product, the foregoing obligation shall terminate as of the date of such merger, consolidation or acquisition. Prior to the start of the Royalty Term for a Licensed Product in any of [***], subject to Section 5.7.3(a), AbbVie shall provide a summary [***] to Morphic of its Development activities with respect to Licensed Products conducted since the last such summary was provided hereunder (or since the Effective Date with respect to the first such summary) and the Parties shall meet [***] at a mutually

agreed time and place to discuss such summary. Without limiting the foregoing, prior to the start of the Royalty Term for a Licensed Product in any of [***], upon Morphic's request in any Calendar Quarter for which a summary is not provided in accordance with the immediately preceding sentence, the Parties shall meet and discuss AbbVie's Development activities with respect to such Licensed Products, and AbbVie shall provide any Information with respect to such Development that is reasonably requested by Morphic.

5.6. Regulatory Activities.

5.6.1. With respect to each Included Target, from and after the Inclusion Date for such Included Target, AbbVie shall, as between the Parties, have the sole right to prepare, obtain and maintain Drug Approval Applications (including the setting of the overall regulatory strategy therefor), other Regulatory Approvals and other submissions and to conduct communications with the Regulatory Authorities in the Territory for the Licensed Products that contain a Licensed Compound Directed to such Included Target. Morphic shall support AbbVie, as may be reasonably necessary, in obtaining Regulatory Approvals for such Licensed Products and in the activities in support thereof, including providing all documents or other materials in the possession or control of Morphic or any of its Affiliates as may be necessary or useful for AbbVie or any of its Affiliates or its or their Sublicensees to obtain Regulatory Approvals for such Licensed Products.

5.6.2. With respect to each Included Target, from and after the Inclusion Date for such Included Target, all Regulatory Documentation (including all Regulatory Approvals) in the Territory relating to the Licensed Products that contain a Licensed Compound Directed to such Included Target shall be owned by, and shall be the sole property and held in the name of, AbbVie or its designated Affiliate, Sublicensee or designee.

5.7. Liver Fibrosis.

5.7.1. Morphic Cost-Sharing Option and Opt-Out.

(a) **Option Grant**. With respect to each Liver Fibrosis Product, AbbVie hereby grants to Morphic an exclusive option, exercisable by Morphic in its sole discretion during the Cost-Share Option Period with respect to such Liver Fibrosis Product, to pay for [***] of the Development Costs and any amounts in respect of Milestone Payments as set forth in Section 7.8.1 with respect to such Liver Fibrosis Product in the Territory in accordance with Section 7.8, in exchange for increased royalties on Net Sales in the Territory of such Liver Fibrosis Product as set forth in Section 7.3.2 (each, a "**Cost-Share Option**").

(b) **Option Exercise**. Morphic shall have the right to exercise its Cost-Share Option with respect to each Liver Fibrosis Product Directed to an Included Target at any time during the Cost-Share Option Period with respect to such Liver Fibrosis Product by giving AbbVie written notice of exercise specifying the applicable Liver Fibrosis Product (each, a "**Cost-Share Notice**").

(c) **Non-Exercise of Cost-Share Option**. With respect to each Liver Fibrosis Product, if Morphic does not provide AbbVie a Cost-Share Notice on or before the expiration of the applicable Cost-Share Option Period for such Liver Fibrosis Product or notifies AbbVie in writing prior to the expiration of such Cost-Share Option Period that Morphic will not be exercising its Cost-Share Option for such Liver Fibrosis Product, then the Cost-Share Option with respect to such Liver Fibrosis Product shall terminate immediately.

(d) **Opt-Out Right**. With respect to each Liver Fibrosis Product for which Morphic exercises its Cost-Share Option pursuant to Section 5.7.1(b), Morphic shall have the right to opt-out of its payment of [***] of Development Costs with respect to such Liver Fibrosis Product at any time upon written notice to AbbVie (each such right, an "**Opt-Out Right**"); provided, that Morphic shall continue to pay [***], of the Development Costs with respect to such Liver Fibrosis Product in the Territory that are incurred through [***] [***] after Morphic exercised such Opt-Out Right.

5.7.2. Diligence. Without limiting Section 5.2, from and after the later of the Inclusion Date for an Included Target and Morphic's first delivery of a Data Package for a Liver Fibrosis Compound directed to such Included Target that demonstrates that such Liver Fibrosis Compound meets the Advancement Criteria for [***], AbbVie shall use Commercially Reasonable Efforts to obtain Regulatory Approval of and Commercialize a Licensed Product that contains such Liver Fibrosis Compound (or, at AbbVie's election, any other Licensed Product) for [***] in [***]; provided, that the fact that a Liver Fibrosis Compound meets the Advancement Criteria for [***] does not, in and of itself, mean that it is commercially reasonable to Develop and Commercialize such Liver Fibrosis Compound. AbbVie shall only have the obligation to use Commercially Reasonable Efforts to obtain Regulatory Approval of and Commercialize one (1) Licensed Product for [***] under this Section 5.7.2 and AbbVie has no obligation to use Commercially Reasonable Efforts to obtain Regulatory Approval of and Commercialize any Licensed Product for [***] other than a Liver Fibrosis Compound that meets the Advancement Criteria for [***].

5.7.3. Reports and Information. With respect to each Liver Fibrosis Product, prior to (x) if Morphic does not exercise its Cost-Share Option as set forth in Section 5.7.1(c) for such Liver Fibrosis Product, the expiration of the applicable Cost-Share Option Period (or earlier if Morphic notifies AbbVie in writing prior to the expiration of such Cost-Share Option Period that Morphic will not be exercising its Cost-Share Option as set forth in Section 5.7.1(c) for such Liver Fibrosis Product) and (y) if Morphic does exercise its Cost-Share Option for such Liver Fibrosis Product, the exercise by Morphic of its Opt-Out Right pursuant to Section 5.7.1(d) with respect to such Liver Fibrosis Product:

(a) for any period during which AbbVie is Developing such Liver Fibrosis Product, the biannual summary provided pursuant to Section 5.5 shall include (i) a good faith estimate of Development Costs incurred with respect to such Liver Fibrosis Product since the last such summary was provided hereunder (or since the applicable Inclusion Date with respect to the first such summary) and (ii) if requested, a non-binding, good faith estimate of future Development Costs (consistent with AbbVie's internal modeling and internal projected costs) to be incurred with respect to the continued Development of such Liver Fibrosis Product;

provided that in the event Morphic merges or consolidates with, or otherwise acquires, or is acquired by, a Third Party (including through a Change of Control) and thereafter Morphic or any of its Affiliates (including any Pre-Existing Entity) Exploits a Competing Product, the foregoing obligation shall terminate as of the date of such merger, consolidation or acquisition;

(b) within [***] after the Clinical Study Report is available for each clinical trial (whether before or after Regulatory Approval) for such Liver Fibrosis Product, AbbVie shall deliver such Clinical Study Report to Morphic; and

(c) within [***] after the delivery of the Clinical Study Report for a Phase IIb Clinical Trial with respect to such Liver Fibrosis Product, AbbVie shall deliver to Morphic (i) a high-level summary of its then-current plan for Development of such Liver Fibrosis Product in the Territory and (ii) a good faith estimate of Development Costs that it anticipates it will incur in connection with the continued Development of such Liver Fibrosis Product, including a budget of the Development Costs to be incurred with respect to such Liver Fibrosis Product for the remainder of the Calendar Year in which such summary and estimate are delivered (broken down by Calendar Quarter). If Morphic exercises its Cost-Share Option as set forth in Section 5.7.1(b) for a Liver Fibrosis Product, at least [***] prior to the beginning of each Calendar Year after such exercise, AbbVie shall deliver to Morphic a budget of the Development Costs to be incurred with respect to such Liver Fibrosis Product in the following Calendar Year broken down by Calendar Quarter (each such budget, together with the budget described in the immediately preceding sentence, a "**Cost-Share Budget**").

5.7.4. Liver Fibrosis Development Committee. Within [***] after the Option Effective Date with respect to an Included Target for which Morphic has delivered a Liver Fibrosis Product, the Parties shall establish a joint information-sharing development committee with respect to such Liver Fibrosis Product (each, a "**Liver Fibrosis Development Committee**"); provided that, in the event Morphic merges or consolidates with, or otherwise acquires, or is acquired by, a Third Party (including through a Change of Control) and thereafter Morphic or any of its Affiliates (including any Pre-Existing Entity) Exploits a Competing Product, AbbVie shall have the right to disband the Liver Fibrosis Development Committee(s) as of the date of such merger, consolidation or acquisition. Each such committee shall consist of three (3) representatives from each Party, and shall meet at least once every Calendar Quarter either in person or by telephone, video conference or similar means in which each participant can hear what is said by and be heard by, the other participants. Each Liver Fibrosis Development Committee shall review and discuss all plans for, and data and Information resulting from, Development of such Liver Fibrosis Product. For clarity, the responsibility of each Liver Fibrosis Development Committee shall be limited to the sharing of information, and each Liver Fibrosis Development Committee shall not have any decision-making authority.

ARTICLE 6
JOINT GOVERNANCE COMMITTEE

6.1. Joint Governance Committee. Within [***] after the Effective Date, the Parties shall establish a joint governance committee (the "**Joint Governance Committee**" or "**JGC**"), which shall consist of three (3) representatives from each Party, each with the requisite

experience and seniority to enable such representative to make decisions on behalf of the Party it represents with respect to the issues falling within the jurisdiction of the JGC. From time to time, each Party may substitute one (1) or more of its representatives to the JGC on written notice to the other Party. AbbVie shall select from its representatives of the JGC the initial chairperson for the JGC. Each [***] during the Term commencing in 2019, the Party for whom the then-current chairperson is not a representative shall select from its representatives the new chairperson for the JGC. From time to time during the term of any chairperson, the Party nominating such chairperson may change the representative who will serve as chairperson on written notice to the other Party. The JGC shall:

6.1.1. review and approve any amendments or updates to the Research Plan;

6.1.2. direct and supervise Morphic's Development activities under each Research Plan and review Morphic's progress against the Research Plan;

6.1.3. consider and select the Research Products to be advanced to IND Enabling Activities based on meeting the Advancement Criteria;

6.1.4. review and discuss the Manufacturing of the Research Products;

6.1.5. review and discuss licenses or other agreements to acquire rights from a Third Party that are necessary or reasonably useful for the Development, Manufacture or Commercialization of the Research Products Directed to a Research Target prior to the expiration of the Option Period with respect to such Research Target; and

6.1.6. perform such other functions as are set forth herein, if and as applicable, or as the Parties may mutually agree in writing.

6.2. General Provisions Applicable to the JGC.

6.2.1. Meetings and Minutes. The JGC shall meet [***] or as otherwise agreed to by the Parties, with the location of in-person meetings alternating between a location designated by Morphic and a location designated by AbbVie, with AbbVie designating the place of the first meeting. The chairperson of the JGC shall be responsible for calling meetings of the JGC on no less than [***] notice unless exigent circumstances require shorter notice. Each Party shall make all proposals for agenda items at least [***] in advance of the applicable meeting and shall provide all appropriate information with respect to such proposed items at least [***] in advance of the applicable meeting; provided, that under exigent circumstances requiring input by the JGC, a Party may provide its agenda items to the other Party within a shorter period of time in advance of the meeting or may propose that there not be a specific agenda for a particular meeting, so long as the other Party consents to such later addition of such agenda items or the absence of a specific agenda for such meeting (which consent shall not be unreasonably conditioned, withheld or delayed). The chairperson of the JGC shall prepare and circulate for review and approval of the Parties minutes of each meeting within [***] after the meeting. The

Parties shall agree on the minutes of each meeting promptly, but in no event later than the next meeting of the JGC, and such approved minutes shall be signed by each Alliance Manager.

6.2.2. Procedural Rules. The JGC shall have the right to adopt such standing rules as shall be necessary for its work, to the extent that such rules are not inconsistent with this Agreement. A quorum of the JGC shall exist whenever there is present at a meeting at least one (1) representative appointed by each Party. Representatives of the Parties on the JGC may attend a meeting either in person or by telephone, video conference or similar means in which each participant can hear what is said by and be heard by, the other participants; provided, that each Calendar Year at least one (1) meeting of the JGC will be in-person. Representation by proxy shall be allowed. Alliance Managers and other employees or consultants of a Party who are not representatives of such Party on the JGC may attend meetings of the JGC; provided, however, that such attendees (a) shall not vote or otherwise participate in the decision-making process of the JGC and (b) are bound by obligations of confidentiality and non-disclosure at least as protective of the other Party as those set forth in ARTICLE 9.

6.2.3. Decision-Making. Subject to the following provisions of this Section 6.2.3, the JGC shall take action by consensus of the representatives present at a meeting at which a quorum exists, with each Party having a single vote irrespective of the number of representatives of such Party in attendance, or by a written resolution signed by at least one (1) representative of each Party. Except for matters outside the jurisdiction and authority of the JGC, as applicable (including as set forth in Section 6.2.4), if the JGC cannot, or does not, reach consensus on an issue within [***] after such issue is first presented to the JGC for consideration, then either Party shall have the right to refer such issue to the Senior Officers for attempted resolution by good faith negotiations during a period of [***]. Any final decision mutually agreed to by the Senior Officers in writing shall be conclusive and binding on the Parties. If such issue has not been resolved by the Senior Officers during such [***]-period, then [***] shall have final decision-making authority; provided, that (a) all such decisions must be consistent with the terms of this Agreement and Applicable Law and (b) any material changes that involve the decrease of the amount of funding, staffing or resources dedicated to the Research Plan or a Research Target must be agreed to in writing by [***], and (c) without limiting clause (a) or (b) above, any material change to the scope or direction of the Research Plan (including a change to the Research Targets, selectivity/potency criteria, minimal efficacy requirements in defined biological models, translational biology requirements or Advancement Criteria for Research Products in IND-Enabling Activities) requires the mutual written agreement of the Parties, such mutual agreement under this clause (c) not to be unreasonably withheld, conditioned or delayed.

6.2.4. Limitations on Authority. Without limitation to the foregoing, the Parties hereby agree that matters explicitly reserved to the consent, approval or other decision-making authority of one or both Parties, as expressly provided in this Agreement, are outside the jurisdiction and authority of the JGC, including amendment, modification or waiver of compliance with this Agreement (which may only be amended or modified as provided in Section 13.8 or compliance with which may only be waived as provided in Section 13.11).

6.2.5. Discontinuation; Disbandment. The JGC shall continue to exist until the first to occur of: (a) the Parties mutually agreeing to disband the JGC, (b) upon AbbVie's request after the exercise by AbbVie of the last Option granted hereunder, (c) upon AbbVie's request after the First Commercial Sale of the first (1st) Licensed Product hereunder, and (d) upon AbbVie's request once Morphic has completed all of its obligations under the Research Plan. Upon the occurrence of any of the foregoing, (i) the JGC shall disband, have no further responsibilities or authority under this Agreement and shall be considered dissolved by the Parties and (ii) any requirement of either Party to provide Information or other materials to the JGC shall be deemed a requirement to provide such Information or other materials to the other Party and AbbVie shall have the right to solely decide, without consultation with Morphic, all matters that are subject to the review or approval by the JGC hereunder (subject to Section 6.2.4 as if it were still in effect).

6.3. Working Groups. From time to time, the JGC may establish and delegate duties to other committees or directed teams (each, a "**Working Group**") on an "as-needed" basis to oversee particular projects or activities. Each such Working Group shall be constituted and shall operate as the JGC determines; provided that each Working Group shall have representation from each Party; and provided, further that any dispute between the representatives of each Party on a Working Group shall be referred to the JGC for resolution in accordance with Section 6.2.3 and the other terms and conditions of this Agreement. Working Groups may be established on an *ad hoc* basis for purposes of a specific project, for the term of the JGC or on such other basis as the JGC may determine. Each Working Group and its activities shall be subject to the oversight, review and approval of, and shall report to, the JGC. In no event shall the authority of the Working Group exceed that specified for the JGC in this ARTICLE 6.

6.4. Alliance Managers. Each Party shall appoint an individual who shall oversee contact between the Parties for all matters between meetings of the JGC, shall be the primary contacts between the Parties after disbandment of the JGC, and shall have such other responsibilities as the Parties may agree in writing after the Effective Date, which individual may be replaced at any time by notice in writing to the other Party (the "**Alliance Managers**"). The Alliance Managers shall work together to manage and facilitate the communication between the Parties under this Agreement, including the resolution (in accordance with the terms of this Agreement) of issues between the Parties that arise in connection with this Agreement. The Alliance Managers shall not have final decision-making authority with respect to any matter under this Agreement.

ARTICLE 7
PAYMENTS AND RECORDS

7.1. Upfront Payment. In partial consideration of the rights granted by Morphic to AbbVie hereunder, and subject to the terms and conditions of this Agreement, no later than [***] after the Effective Date, AbbVie shall pay Morphic an upfront, non-refundable, non-creditable amount equal to One Hundred Million Dollars ($100,000,000).

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

7.2. Milestones. On the terms and subject to the conditions set forth herein, AbbVie shall make the following payments to Morphic (collectively, the "**Milestone Payments**") after the achievement following the Effective Date during the Term of the applicable events set forth below (collectively, the "**Milestone Events**").

7.2.1. Development Milestones. Subject to the terms and conditions of this Agreement, within [***] after the achievement by or on behalf of AbbVie or any of its Affiliates or Sublicensees of any of the following Milestone Events after the Effective Date during the Term, AbbVie shall pay to Morphic the corresponding Milestone Payment with respect to such Milestone Event on an Indication-by-Indication basis:

	Milestone Event	Milestone Payment
1.	[***]	[***]
2.	[***]	[***]
3.	[***]	[***]

Notwithstanding the foregoing, in the event Morphic exercises its Cost-Share Option with respect to a Liver Fibrosis Product (x) AbbVie shall have no obligation to pay the Milestone Payment (3) with respect to such Liver Fibrosis Product and (y) Milestone Payments (1) and (2) shall be equal to [***] of the amounts set forth above with respect to such Liver Fibrosis Product (and, for clarity, in the event Morphic exercises its Opt-Out Right with respect to a Liver Fibrosis Product, no additional amounts shall be due with respect to Milestone Payments that became payable while Morphic was sharing costs with respect to such Liver Fibrosis Product and no payments shall be due with respect to Milestone Event (3) in this Section 7.2.1 with respect to such Liver Fibrosis Product).

Each Milestone Event in this Section 7.2.1 shall be payable once per Indication. For clarity, if a Milestone Event in this Section 7.2.1 is achieved by two (2) or more Licensed Products or Licensed Compounds for the same Indication, such Milestone Event shall only be payable once for such Indication. The maximum aggregate amount of Milestone Payments payable under this Section 7.2.1 by AbbVie with respect to Licensed Products for each Indication is [***] (or, with respect to a Cost-Share Product, [***]).

Milestone Events are determined as of the Initiation of a clinical trial, so that if a clinical trial does not meet the criteria for a Phase IIb Clinical Trial or Phase III Clinical Trial, as applicable, at the time such clinical trial is Initiated, but is later modified based on interim analyses to satisfy the criteria of a Phase IIb Clinical Trial or Phase III Clinical Trial, as applicable, no Milestone Payment shall be payable upon such modification. With respect to the Milestone Events set forth in the table above in this Section 7.2.1: (a) if for any reason Milestone Event 1 does not occur before the first to occur of Milestone Event 2 or Milestone Event 3, then Milestone Event 1 shall be deemed to occur concurrently with the occurrence of the first to occur of Milestone Event 2 and Milestone Event 3; (b) if for any reason Milestone Event 2 does not occur before Milestone Event 3, then Milestone Event 2 shall be deemed to occur concurrently with the occurrence of

Milestone Event 3; and (c) if Milestone Event 3 does not occur before any of the Milestone Events in Section 7.2.2, then Milestone Event 3 shall be deemed to occur concurrently with the Regulatory Approval for such Licensed Product in [***].

7.2.2. Launch Milestones. Subject to the terms and conditions of this Agreement, including Section 7.4, within [***] after the achievement by or on behalf of AbbVie or its Affiliates or Sublicensees of any of the following Milestone Events after the Effective Date during the Term, AbbVie shall pay to Morphic the corresponding Milestone Payment with respect to such Milestone Event on an Indication-by-Indication basis:

Milestone Event	Milestone Payment
[***]	[***]
[***]	[***]
[***]	[***]

Each Milestone Event in this Section 7.2.2 shall be payable once per Indication. For clarity, if a Milestone Event in this Section 7.2.2 is achieved by two (2) or more Licensed Products or Licensed Compounds for the same Indication, such Milestone Event shall only be payable once for such Indication. The maximum aggregate amount of Milestone Payments payable under this Section 7.2.2 by AbbVie with respect to Licensed Products for each Indication is [***].

7.2.3. Net Sales Milestones. Subject to the terms and conditions of this Agreement, including Section 7.4, within [***] after the end of the Calendar Quarter in which any of the following Milestone Events is achieved by or on behalf of AbbVie or its Affiliates or Sublicensees, AbbVie shall pay to Morphic the corresponding Milestone Payment with respect to such Milestone Event on an Included Target-by-Included Target basis in the Territory:

	Milestone Event	Milestone Payment
1.	[***]	[***]
2.	[***]	[***]

Each Milestone Payment in this Section 7.2.3 shall be payable only upon the first achievement of the applicable Milestone Event by Licensed Products containing Licensed Compounds Directed to such Included Target and not for any other subsequent achievement by any additional Licensed Product(s) containing such Licensed Compounds. The maximum aggregate amount of

Milestone Payments payable under this Section 7.2.3 by AbbVie with respect to Licensed Products for each Included Target is [***].

7.2.4. Payment of Milestones. Each Milestone Payment payable under this Section 7.2 shall be non-refundable and, except as provided in Section 7.8 and Section 7.14, non-creditable. The Parties acknowledge and agree that Milestone Payments do not constitute royalties within the meaning of U.S. Bankruptcy Code §365(n) or relate to licenses of intellectual property hereunder.

7.3. Royalties.

7.3.1. Royalty Rates. Subject to the terms and conditions of this Agreement, AbbVie shall pay to Morphic a royalty on Net Sales of each Licensed Product in the Territory on a Licensed Product-by-Licensed Product and Calendar Year basis at the following rates:

	Aggregate Net Sales in a Calendar Year	Royalty Rate
1.	[***]	[***]
2.	[***]	[***]
3.	[***]	[***]

With respect to each Licensed Product in each country in the Territory, from and after the expiration of the Royalty Term for such Licensed Product in such country, Net Sales of such Licensed Product in such country shall be excluded for purposes of calculating the Net Sales thresholds and ceilings set forth in this Section 7.3.1.

7.3.2. Royalty Increases. If Morphic exercises the Cost-Share Option with respect to a Cost-Share Product, then the royalty rates set forth in Section 7.3.1 shall be changed to a [***]of Net Sales of such Cost-Share Product; provided that, for clarity, if Morphic exercises its Opt-Out Right with respect to such Cost-Share Product pursuant to Section 5.7.1(d), this Section 7.3.2 shall no longer apply to any Net Sales of such Cost-Share Product made after the date that is [***] after Morphic exercised such Opt-Out Right, in which case, the provisions of Section 7.3.1 shall apply from and after such date as if no applicable Cost-Share Option were exercised.

7.3.3. Royalty Term. AbbVie's obligation to pay Morphic royalties with respect to a Licensed Product, on a Licensed Product-by-Licensed Product and country-by-country basis, shall commence on the date of first Net Sales of such Licensed Product in such country (even if prior to receipt of Regulatory Approval of such Licensed Product in such country) and shall end at the expiration of the Royalty Term for such Licensed Product in such country.

7.3.4. Royalty Rate Reductions.

(a) Notwithstanding Section 7.3.1 or Section 7.3.2, but subject to Section 7.3.3 and Section 7.3.4(c), in the event that:

(1) from and after the date on which a Licensed Product is sold in a country in the Territory and is not claimed by a Royalty Claim in such country during the Royalty Term for such Licensed Product in such country, the royalty rate for such Licensed Product set forth in Section 7.3.1 or Section 7.3.2, as applicable, with respect to such country shall be reduced by [***]; and

(2) if in any country in the Territory during the Royalty Term in such country for a Licensed Product (i) a Generic Product (other than a Generic Product approved in the U.S. pursuant to Section 505(b)(2) of the FFDCA or any foreign equivalent) with respect to such Licensed Product in such country has a market share of more than [***] in any Calendar Quarter or (ii) a Generic Product approved in the U.S. pursuant to Section 505(b)(2) of the FFDCA or any foreign equivalent with respect to such Licensed Product is launched in such country and unit sales of such Licensed Product in a Calendar Quarter have decreased by [***] or more from average unit sales in the four (4) Calendar Quarters immediately preceding the Calendar Quarter in which such a Generic Product is launched in such country, then in each case ((i) and (ii)), the royalties due to Morphic pursuant to this Section 7.3 with respect to such Licensed Product in such country shall be reduced by [***] beginning in the Calendar Quarter following the Calendar Quarter in which clause (i) or (ii), as applicable, occurs. With respect to clause (i), market share shall be based on [***] and with respect to clause (ii) market share shall be based [***].

(b) [***]

(c) In no event shall the royalties payable to Morphic under Section 7.3.1 or Section 7.3.2, as applicable, for a particular Licensed Product be reduced by more than [***] of what would otherwise be payable in any Calendar Quarter as a result of the reductions (whether taken alone or together in the aggregate) set forth in Section 7.3.4, Section 7.5, Section 8.6.4 or Section 8.7; provided, however, that in no event shall the royalties payable to Morphic under Section 7.3.2 for a particular Cost-Share Product be reduced by more than [***] of what would otherwise be payable in any Calendar Quarter as a result of the reductions (whether taken alone or together in the aggregate) set forth in Section 7.5, Section 8.6.4 or Section 8.7. Notwithstanding anything to the contrary contained herein, nothing in this Section 7.3.3(c) shall impair the ability of AbbVie to seek and obtain indemnification in accordance with Section 11.2 or AbbVie's right to offset in accordance with Section 7.14.

7.4. Sublicensee Net Sales. Any and all Net Sales by Sublicensees shall be excluded from the royalty calculations in Section 7.3, including the Net Sales thresholds and ceilings, except that with respect to Net Sales of Licensed Products by Sublicensees (other than a Sublicensee that is granted a sublicense to settle litigation related to the alleged infringement of the Patents claiming such Licensed Product or to avoid any such litigation with respect to any Third Party that (x) does not Commercialize such Licensed Product or (y) has submitted an

application to a Regulatory Authority to market a Generic Product with respect to such Licensed Product) to Third Parties, royalties to Morphic hereunder with respect to such Net Sales, for any period, shall equal:

(a) with respect to such Net Sales in the United States, the amount of royalties with respect to such sales during such period that result from the royalty calculations under Section 7.3;

(b) with respect to such Net Sales in [***]:

(1) on a country-by-country basis, with respect to sublicenses with respect to a Licensed Product granted to Sublicensees prior to completion of the first pivotal clinical trial for such country for such Licensed Product, the amount of royalties with respect to such sales during such period that result from the royalty calculations under Section 7.3; and

(2) on a country-by-country basis, with respect to sublicenses granted with respect to a Licensed Product to Sublicensees after the completion of the first pivotal clinical trial for such country for such Licensed Product, at AbbVie's election, on a country-by-country basis, to be made by written notice to Morphic on a country-by-country basis within [***] after the later of AbbVie's entering into such sublicense and the First Commercial Sale of such Licensed Product in a country, either (i) [***] of any Sublicense Income received by AbbVie or its Affiliates with respect to such Licensed Product in such country from such Sublicensees during such period or (ii) the amount of royalties with respect to such sales of such Licensed Product in such country during such period that result from the royalty calculations under Section 7.3 (without application of this Section 7.4); provided that if, with respect to such a sublicense, AbbVie elects to pay [***] of any Sublicense Income received by AbbVie or its Affiliates with respect to such Licensed Product in such country in accordance with clause (i), any and all Net Sales by the applicable Sublicensee in such country under such sublicense shall be excluded from Net Sales for purposes of the Milestone Events set forth in Section 7.2.3 or the royalty calculations under Section 7.3, and any sale by such Sublicensee in such country shall not trigger any Milestone Event set forth in Section 7.2.2. As used herein, "**Sublicense Income**" means any and all amounts (including upfront fees, license maintenance fees, milestone payments, royalties and other similar licensing payments) paid to AbbVie or its Affiliates by such Sublicensee in consideration of or otherwise based upon the rights granted by AbbVie to such Sublicensee with respect to the applicable Licensed Product, but excluding any amounts paid to AbbVie or its Affiliates by such Sublicensee (w) in consideration of, including reimbursement for, any supply of Licensed Products by or on behalf of AbbVie or its Affiliates, or any research, development or other activities relating to Licensed Products that AbbVie or its Affiliates has performed or may perform on behalf of a Sublicensee, except to the extent Morphic demonstrates that such payments are in excess of fair market value for such supply or activities; (x) as payment or reimbursement for amounts owed or paid by AbbVie to Morphic under this Agreement; (y) as reimbursement of actual patent prosecution and maintenance costs and expenses or other costs or expenses; or (z) in connection with awards or judgments in patent or other intellectual property right enforcement, which shall be allocated among the Parties in accordance with ARTICLE 8.

(c) With respect to such Net Sales in any other country (for clarity, other than [***]), at AbbVie's election, on a country-by-country basis, to be made by written notice to Morphic on a country-by-country basis within [***] after the later of AbbVie's entering into such sublicense and the First Commercial Sale of such Licensed Product in a country, either (i) [***] of any Sublicense Income received by AbbVie or its Affiliates with respect to such Licensed Product in such country from such Sublicensees during such period or (ii) the amount of royalties with respect to such sales of such Licensed Product in such country during such period that result from the royalty calculations under Section 7.3 (without application of this Section 7.4); provided that if, with respect to such a sublicense, AbbVie elects to pay [***] of any Sublicense Income received by AbbVie or its Affiliates with respect to such Licensed Product in such country in accordance with clause (i), any and all Net Sales by the applicable Sublicensee in such country under such sublicense shall be excluded from Net Sales for purposes of the Milestone Events set forth in Section 7.2.3 or the royalty calculations under Section 7.3.

7.5. Third Party Payments. If (a) AbbVie enters into an agreement with a Third Party in order to obtain a license or other right to a Third Party Right with respect to a Licensed Compound or Licensed Product in one (1) or more countries in the Territory pursuant to Section 8.7 or (b) AbbVie is responsible for payments to a Third Party with respect to such Licensed Compound or Licensed Product pursuant to an agreement entered into by Morphic in accordance with Section 2.4.6, AbbVie shall be entitled to deduct from any Milestone Payments payable under Section 7.2 or royalties payable under Section 7.3 with respect to such Licensed Product in such country [***] of all upfront payments, milestone payments, royalties and other amounts paid to such Third Party in respect of such agreement, in each case, to the extent reasonably allocable to such Third Party Right in such country ("**Third Party Payments**"). Credits for reductions pursuant to this Section 7.5 not exhausted in any Calendar Quarter may be carried into future Calendar Quarters, subject the preceding sentence. Notwithstanding anything to the contrary contained herein, nothing in this Section 7.5 shall impair the ability of AbbVie to seek and obtain indemnification in accordance with Section 11.2 or AbbVie's right to offset in accordance with Section 7.14.

7.6. Estimated Sales Levels. Morphic acknowledges and agrees that the sales levels set forth in Section 7.2.3 and Section 7.3.1 shall not be construed as representing an estimate or projection of anticipated sales of the Licensed Products, or implying any level of diligence or Commercially Reasonable Efforts, in the Territory and that the sales levels set forth in Section 7.2.3 and Section 7.3.1 are merely intended to define AbbVie's royalty and other payment obligations, as applicable, in the event such sales levels are achieved.

7.7. Royalty Payments and Reports. AbbVie shall calculate all amounts payable to Morphic pursuant to Section 7.2.3, Section 7.3 and Section 7.4 at the end of each Calendar Quarter, which amounts shall be converted to Dollars, in accordance with Section 7.9. AbbVie shall pay to Morphic the royalty amounts due with respect to a given Calendar Quarter [***] after the end of such Calendar Quarter. Each payment of royalties due to Morphic shall be accompanied by a statement of the amount of Net Sales of each Licensed Product in each

country in the Territory during the applicable Calendar Quarter and a calculation of the amount of royalty payment due on such Net Sales for such Calendar Quarter.

7.8. Cost-Share.

7.8.1. Within [***] after AbbVie first doses a subject in a pivotal clinical trial for a Cost-Share Product after Morphic exercises its Cost-Share Option with respect to such Cost-Share Product in accordance with Section 5.7.1(b), Morphic shall reimburse AbbVie (a) [***] of any Milestone Payment set forth in Section 7.2.1(1) or (2) and (b) [***] of any Milestone Payment set forth in Section 7.2.1(3), in each case ((a) and (b)), with respect to the applicable Cost-Share Product that AbbVie paid to Morphic prior to Morphic's exercise of its Cost-Share Option with respect to such Cost-Share Product.

7.8.2. If Morphic exercises its Cost-Share Option with respect to a Cost-Share Product, within [***] days after (a) Morphic exercises its Cost-Share Option with respect to such Cost-Share Product in accordance with Section 5.7.1(b) and (b) the end of each Calendar Quarter thereafter, in each case ((a) and (b)), AbbVie shall provide to Morphic a summary report of the Development Costs incurred by or on behalf of AbbVie or its Affiliates during such Calendar Quarter (or, with respect to the first such report, since the Inclusion Date with respect to the applicable Included Target) with respect to such Cost-Share Product (each, a "**Development Cost Report**").

7.8.3. Subject to Section 5.7.1(d), within [***] after receipt of each such Development Cost Report, Morphic shall reimburse AbbVie for [***] of the Development Costs set forth therein for such Cost-Share Product; provided that, if the Development Costs incurred by or on behalf of AbbVie or its Affiliates in any Calendar Quarter exceed the Cost-Share Budget for such Calendar Quarter by more than [***] of the Cost-Share Budget for such Calendar Quarter, an "**Overrun**"), Morphic may elect to defer payment of such Overrun in accordance with Section 7.8.4 upon written notice to AbbVie within [***] after receipt of the applicable Development Cost Report. If Morphic disputes any portion of any Development Cost Report, it shall promptly provide AbbVie with written notice of the disputed portion and its reasons therefor, and the Parties shall use good faith efforts to resolve any such disputes promptly.

7.8.4. Subject to Section 5.7.1(d), if Morphic elects to defer payment of any Overrun with respect to a Cost-Share Product with respect to any Calendar Quarter, Morphic shall pay to AbbVie an amount equal to such Overrun deferred in such Calendar Quarter within [***] after the date that Morphic notifies AbbVie it elects to defer such Overrun in accordance with Section 7.8.3. For clarity, if Morphic exercises its Opt-Out Right for a Cost-Share Product, the foregoing Overrun payment obligations shall continue to apply with respect to Morphic's cost-sharing obligations.

7.9. Mode of Payment. All payments to either Party under this Agreement shall be made by deposit of Dollars in the requisite amount to such bank account as the payee Party may from time to time designate by notice to the payor Party. For the purpose of calculating any amounts due under, or otherwise reimbursable pursuant to, this Agreement, a

Party shall convert any amount expressed in a foreign currency into Dollar equivalents using its, its Affiliate's or (sub)licensee's standard conversion methodology consistent with the Accounting Standards.

7.10. Taxes

7.10.1. Withholding Taxes. If any amount to be paid to either Party hereunder is subject to any withholding or similar tax, the Parties shall use their commercially reasonable efforts to do all such acts and things and to sign all such documents as will enable them to take advantage of any applicable double taxation agreement or treaty. If there is no applicable double taxation agreement or treaty, or if an applicable double taxation agreement or treaty reduces but does not eliminate such withholding or similar tax, the payor Party shall remit such withholding or similar tax to the appropriate Governmental Authority, deduct the amount paid from the amount due to the payee Party and secure and send to the payee Party the best available evidence of the payment of such withholding or similar tax. Any such amounts deducted by the payor Party in respect of such withholding or similar tax shall be treated as having been paid by the payor for purposes of this Agreement. If a Governmental Authority retroactively determines that a payment made by the payor Party to the payee Party pursuant to this Agreement should have been subject to withholding or similar (or to additional withholding or similar) taxes, and such Party (the "**Withholding Party**") remits such withholding or similar taxes to the Governmental Authority, including any interest and penalties that may be imposed thereon (together with the tax paid, the "**Amount**"), the Withholding Party shall have the right (a) to offset the Amount against future payment obligations of the Withholding Party under this Agreement, (b) to invoice the other Party for the Amount (which shall be payable by the other Party within [***] of its receipt of such invoice) or (c) to pursue reimbursement of the Amount by any other available remedy.

7.10.2. Indirect Taxes. All payments are exclusive of value added taxes, sales taxes, consumption taxes and other similar taxes (the "**Indirect Taxes**"). If any Indirect Taxes are chargeable in respect of any payments, the payor Party shall pay such Indirect Taxes at the applicable rate in respect of such payments following receipt, where applicable, of an Indirect Taxes invoice in the appropriate form issued by the payee Party in respect of those payments. The Parties shall issue invoices for all amounts payable under this Agreement consistent with Indirect Tax requirements and irrespective of whether the sums may be netted for settlement purposes. If the Indirect Taxes originally paid or otherwise borne by the payor Party are in whole or in part subsequently determined not to have been chargeable, all necessary steps shall be taken by the payee Party to receive a refund of these undue Indirect Taxes from the applicable governmental authority or other fiscal authority and any amount of undue Indirect Taxes repaid by such authority to the payee Party shall be transferred to the payor Party within [***] of receipt.

7.10.3. Tax Gross-Up. Notwithstanding the foregoing, if (a) the payor Party redomiciles or licenses or assigns its rights or obligations under this Agreement to a Third Party, (b) as a result of such redomiciliation or license or assignment, the payor Party (or its licensee or assignee) is required by Applicable Law to withhold taxes from or in respect of any amount payable under this Agreement, and (c) such withholding taxes exceed the amount of

withholding taxes that would have been applicable but for such redomiciliation or license or assignment, then any such amount payable shall be increased to take into account such withholding taxes as may be necessary so that, after making all required withholdings (including withholdings on the additional amounts payable), the payee Party (or its assignee) receives an amount equal to the sum it would have received had no such increased withholding been made. The obligation to pay additional amounts pursuant to the preceding sentence shall not apply, however, to the extent such increased withholding tax (i) would not have been imposed but for the license or assignment by the payee Party of its rights or obligations under this Agreement or the redomiciliation of such payee Party outside of the United States, to the extent such license or assignment or redomiciliation occurs after the redomiciliation or license or assignment by the payor Party described in the first sentence of this Section 7.10.3, or (ii) are attributable to the failure by the payee Party to comply with the requirements of Section 7.10.4. Further, for avoidance of doubt, this Section 7.10.3 does not apply to any withholding tax arising as a result of the redomiciliation of the payee Party or the license or assignment of its rights or obligations under this Agreement. To the extent the payee Party receiving the additional amounts required by this Section 7.10.3 and the payee Party's Affiliates, taken as a whole, actually realize an overall reduction in cash taxes otherwise due (determined on a with and without basis and taking into account the overall tax liability of the payee Party's affiliates) as a result of a foreign tax credit, a tax refund or other tax benefit attributable to withholding taxes in respect of which the payee Party received additional amounts pursuant to this Section 7.10.3 (such reduction, a "**Tax Cost Benefit**"), the payee Party shall pay to the payor Party that paid such additional amounts an amount equal to such Tax Cost Benefit (but only to the extent of such additional amounts paid), net of all reasonable out-of-pocket expenses incurred by the payee Party and its Affiliates in connection with the obtaining or receipt of such Tax Cost Benefit; such payment by the payee Party to the payor Party shall be made within [***] of filing a return reflecting such Tax Cost Benefit or in the case of a Tax Cost Benefit that is a tax refund, receiving such refund. The foregoing sentence shall not be construed to require the payee Party to make available its tax returns to the payor Party; however, the payee Party shall have the obligation (i) to provide the payor Party, upon payment of such additional amounts under this Section 7.10.3, with a written, good-faith analysis as to whether it anticipates realizing a Tax Cost Benefit from such additional amounts and (ii) to notify the payor Party when such Tax Cost Benefit is realized. Solely for purposes of this Section 7.10.3, a Party's "domicile" shall include its jurisdiction of incorporation or tax residence and a Party's "redomiciliation" shall include a reincorporation or other action resulting in a change in tax residence of the applicable Party or its assignee.

7.10.4. Tax Documentation. Each Party has provided a properly completed and duly executed IRS Form W-9 or applicable Form W-8 to the other Party. Each Party and any other recipient of payments under this Agreement shall provide to the other Party, at the time or times reasonably requested by such other Party or as required by Applicable Law, such properly completed and duly executed documentation (for example, IRS Forms W-8 or W-9) as will permit payments made under this Agreement to be made without, or at a reduced rate of, withholding for taxes.

7.10.5. Cooperation. The Parties shall reasonably cooperate in good faith, taking into account their own respective tax positions and status, to determine the U.S.

federal income tax treatment of the Cost-Share Option in a manner that preserves to the fullest extent possible the deductibility (for U.S. federal income tax purposes) by Morphic of its payments thereunder, at the time that Morphic exercises its rights under the Cost-Share Option; provided that such cooperation shall not require any Party to (a) incur additional costs, (b) take or omit any action that is inconsistent with its own tax position, status or treatment, or (c) take any position with respect to any taxing authority, which in its good faith opinion, does or reasonably could be expected to create any liability or tax controversy for such Party.

7.11. Interest on Late Payments. If any payment due to either Party under this Agreement is not paid when due, then the payor Party with respect thereto shall pay interest thereon (before and after any judgment) at an annual rate (but with interest accruing on a daily basis) equal to the lesser of (a) [***] above [***], or any successor rate thereto and (b) [***] above [***] in United States Dollars having a maturity of [***]published by [***], as adjusted from time to time on the first [***] business day of each month, or any successor rate thereto, such interest to run from the date on which payment of such sum became due; provided that, with respect to any disputed payments, no interest payment shall be due until such dispute is resolved and the interest which shall be payable thereon shall be based on the finally-resolved amount of such payment, calculated from the original date on which the disputed payment was due through the date on which payment is actually made.

7.12. Financial Records. AbbVie shall, and shall cause its Affiliates and its and their Sublicensees to, keep complete and accurate financial books and records pertaining to Net Sales to the extent required to calculate and verify all amounts payable hereunder. AbbVie shall, and shall cause its Affiliates and its and their sublicensees to, retain such books and records until the later of (a) [***] after the end of the period to which such books and records pertain and (b) the expiration of the applicable tax statute of limitations (or any extensions thereof) or for such longer period as may be required by Applicable Law.

7.13. Audit.

7.13.1. Procedures. At the request of Morphic, AbbVie shall, and shall cause its Affiliates and its and their Sublicensees to, permit an independent auditor designated by Morphic and reasonably acceptable to AbbVie, at reasonable times and upon reasonable notice, to audit the books and records maintained pursuant to Section 7.12 to ensure the accuracy of all reports and payments made hereunder. Such audits may not (a) be conducted for any Calendar Quarter more than [***] after the end of such Calendar Quarter, (b) be conducted more than once in any [***] period (unless a previous audit during such twelve (12)-month period revealed an underpayment with respect to such period) or (c) be repeated for any Calendar Quarter. The cost of any audit shall be borne by Morphic, unless the audit reveals a variance of more than the greater of [***] from the reported amounts and [***], in which case AbbVie shall bear the cost of such audit. Unless disputed pursuant to Section 7.13.2, if an audit concludes that (x) additional amounts were owed by AbbVie, then AbbVie shall pay the additional amounts, with interest from the date originally due as provided in Section 7.11 or (y) excess payments were made by AbbVie, then Morphic shall reimburse such excess payments, in either case ((x) or (y)), within [***] after the date on which such audit is completed.

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

7.13.2. Audit Dispute. In the event of a dispute with respect to any audit under Section 7.13.1, Morphic and AbbVie shall work in good faith to resolve the dispute. If the Parties are unable to reach a mutually acceptable resolution of any such dispute within [***] after one Party notifies the other Party of such dispute, the Parties shall submit such dispute for resolution to a certified public accounting firm jointly selected by each Party's certified public accountants or to such other Person as the Parties shall mutually agree (the "**Auditor**"). The decision of the Auditor shall be final and the costs of such resolution as well as the initial audit shall be borne between the Parties in such manner as the Auditor shall determine. Not later than [***] after such decision and in accordance with such decision, AbbVie shall pay the additional amounts, with interest from the date originally due as provided in Section 7.11, or Morphic shall reimburse the excess payments, as applicable.

7.13.3. Confidentiality. Morphic shall treat all information subject to review under this ARTICLE 7 in accordance with the confidentiality provisions of ARTICLE 9. AbbVie shall not be obligated to provide any information to the independent auditor pursuant to Section 7.13.1 or the Auditor pursuant to Section 7.13.2, until the independent auditor or the Auditor, as applicable, has entered into a reasonably acceptable confidentiality agreement with AbbVie obligating such independent auditor or the Auditor, as applicable, to retain all such financial information in confidence pursuant to such confidentiality agreement.

7.14. Right to Offset. Each Party shall have the right to offset any amount owed by the other Party to such first Party under or in connection with this Agreement against any payments owed by such first Party to such other Party under this Agreement. Such offsets shall be in addition to any other rights or remedies available under this Agreement and Applicable Law.

7.15. Financial Obligations Under In-License Agreements. Morphic shall be responsible for all payments owed to Third Parties under each In-License Agreement in effect as of the Effective Date and the Other Morphic Agreements. With respect to In-License Agreements entered into after the Effective Date, (a) Morphic shall be responsible for all payments owed to Third Parties under In-License Agreements described in Section 2.4.6(a), and (b) Morphic shall be responsible for all payments owed to Third Parties under In-License Agreements described in Section 2.4.6(b) except that, if AbbVie consents to such license or other agreement in accordance with Section 2.4.6(b), then, following AbbVie's exercise of its Option with respect to the applicable Research Target, subject to Section 7.5, Section 7.14 and Section 11.2, AbbVie shall be responsible for any payment thereunder arising after such Option exercise to the extent reasonably allocable to AbbVie's or its Affiliates' Exploitation of a Licensed Product Directed to such Research Target in accordance with the terms to which AbbVie consented in accordance with Section 2.4.6(b).

ARTICLE 8
INTELLECTUAL PROPERTY

8.1. Ownership of Intellectual Property.

8.1.1. Ownership of IP. Subject to the license grants and other rights herein as between the Parties, each Party shall own and retain all right, title and interest in and to any and all Information and inventions that are conceived, discovered, developed or otherwise made by or on behalf of such Party (or its Affiliates or its or their (sub)licensees) under this Agreement, whether or not patented or patentable, and any and all Patents and other intellectual property rights with respect thereto. For clarity, and for the purpose of this ARTICLE 8, each Party, its Affiliates and its or their (sub)licensees shall not be considered a (sub)licensee of the other Party.

8.1.2. Ownership of Joint IP. As between the Parties, each Party shall each own an equal, undivided interest in any and all: (a) Information and inventions that are conceived, discovered, developed or otherwise made under this Agreement jointly by or on behalf of Morphic or its Affiliates or its or their (sub)licensees, on the one hand, and AbbVie or its Affiliates or its or their Sublicensees, on the other hand, in connection with the work conducted under this Agreement, whether or not patented or patentable (the "**Joint Know-How**"); and (b) Patents (the "**Joint Patents**") and other intellectual property rights with respect to the Information and inventions described in clause (a) (together with Joint Know-How and Joint Patents, the "**Joint IP**"). Each Party shall promptly disclose to the other Party in writing and shall cause its Affiliates, and its and their (sub)licensees to so disclose, the development, making, conception or reduction to practice of any Joint Know-How or Joint Patents. Subject to the licenses granted under Section 4.1 and the exclusivity obligations under Section 4.5, each Party shall have the right to Exploit the Joint IP without a duty of seeking consent or accounting to the other Party.

8.1.3. Ownership Exception. Notwithstanding Section 8.1.1 or Section 8.1.2, as between the Parties, Morphic shall exclusively own all right, title and interest in and to any and all Integrin Conformational Stabilization Patents developed under this Agreement using Morphic Know-How or Morphic's Confidential Information regardless of which Party or its Affiliates developed such Integrin Conformational Stabilization Patents or whether such Integrin Conformational Stabilization Patents were jointly developed by or on behalf of the Parties or their Affiliates; provided that Morphic (on behalf of itself and its Affiliates) shall grant, and hereby grants, to AbbVie and its Affiliates a perpetual, irrevocable, nonexclusive, worldwide, royalty-free, fully paid-up, sublicensable (through multiple tiers) right and license under such Integrin Conformational Stabilization Patents that were solely or jointly developed by or on behalf of AbbVie or its Affiliates for all purposes.

8.1.4. United States Law. The determination of whether Information and inventions are conceived, discovered, developed or otherwise made by or on behalf of a Party for the purpose of allocating proprietary rights (including Patent, copyright or other intellectual property rights, and ownership under Sections 8.1.1, Section 8.1.2 or Section 8.1.3) therein, shall, for purposes of this Agreement, be made in accordance with the United States patent law, copyright law, trademark law and other Applicable Law in the United States, irrespective of conflict of laws and where such conception, discovery, development or making occurs. For clarity, if United States law is found to be unenforceable with respect to the conception, discovery, development or making of any Information or other inventions hereunder,

each Party shall, and does hereby, assign, transfer and otherwise convey, and shall cause its Affiliates and its and their (sub)licensees to so assign, transfer and otherwise convey, to the other Party, without additional compensation, such right, title and interest in and to any Information, inventions, Patents and other intellectual property rights without the need for any further action by the other Party, as is necessary to fully effect, as applicable, (a) the sole ownership provided for in Section 8.1.1 and Section 8.1.3 or (b) the joint ownership provided for in Section 8.1.2. The assigning Party shall perform all acts or refrain from taking action, as required, and shall execute and deliver to the assignee Party any and all applications, oaths, declarations, affidavits, waivers, assignments and other documents and instruments as shall be deemed necessary or desirable by the assignee Party to evidence, obtain, perfect, and transfer such intellectual property throughout the world and to render all lawful assistance in connection with the same to effectuate the foregoing assignment.

8.1.5. Assignment Obligation. Each Party shall cause all Persons who perform Development, regulatory, Manufacturing, or Commercialization activities for such Party under this Agreement or who conceive, discover, develop or otherwise make any Information or inventions by or on behalf of such Party or its Affiliates or its or their (sub)licensees under this Agreement to be under an obligation to assign (or, if such Party is unable to cause such Person to agree to such assignment obligation despite such Party's using commercially reasonable efforts to negotiate such assignment obligation, provide an exclusive license under) their rights in any Information and inventions resulting therefrom to such Party, except where Applicable Law requires otherwise.

8.2. Control of Intellectual Property. Neither Party shall, and each Party shall cause its Affiliates not to, enter into or amend any agreement with a Third Party, or include in any such agreement or amendment any restrictive provisions, with an intent to limit its Control of, or to not Control, any Information, Patent or other intellectual property right that would be subject to the license grants in Section 4.1 in the absence of such agreement, amendment or restrictive provisions. Further, when entering into any agreement or amendment with a Third Party relating to any Information, Patents or other intellectual property rights that, if Controlled by a Party or its Affiliates, would be subject to the license grants in Section 4.1, each Party shall use good faith efforts to obtain Control of such Information, Patents and other intellectual property rights.

8.3. Prosecution and Maintenance of Patents.

8.3.1. Morphic Patents.

(a) Subject to Section 8.3.1(b), as between the Parties, Morphic shall have the first right, but not the obligation, to prepare, file, prosecute, and maintain (including the responsibility to conduct and manage any interference, re-issuance, re-examination, opposition, and post-grant proceedings, including inter partes reviews and post-grant reviews) (collectively, "**Prosecute**" or "**Prosecution**") in the Territory any Morphic Patents using counsel of its own choice.

(b) With respect to each Included Target, from and after the Inclusion Date for such Included Target, AbbVie shall have the first right, but not the obligation, to Prosecute in the Territory any Morphic Patents that specifically claim (i) a Licensed Compound or Licensed Product as a composition of matter irrespective of whether such Morphic Patent claims other compounds or products or (ii) the Exploitation of a Licensed Compound, Licensed Product, or other Competing Product (each, an "**Included Target Patent**") using counsel of its own choice.

8.3.2. Joint Patents.

(a) Subject to Section 8.3.2(b), as between the Parties, [***] shall have the first right, but not the obligation, to Prosecute in the Territory any Joint Patents using counsel of its own choice.

(b) With respect to each Included Target, from and after the Inclusion Date for such Included Target, [***] shall have the first right, but not the obligation, to Prosecute in the Territory any Joint Patents that claim Licensed Compounds Directed to such Included Target and the corresponding Licensed Products or the Exploitation of such Licensed Compounds or Licensed Products (each, an "[***] **Prosecuted Joint Patent**") using counsel of its own choice.

8.3.3. AbbVie Patents. As between the Parties, AbbVie shall have the sole right, but not the obligation, to Prosecute in the Territory all Patents owned or controlled, and that are conceived, discovered, developed or otherwise made, by or on behalf of AbbVie under this Agreement (other than (a) Integrin Conformational Stabilization Patents and (b) the Joint Patents, which are each addressed earlier in this Section 8.3) ("**AbbVie Patent**"), at its sole cost and expense and using counsel of its own choice.

8.3.4. Conduct of Prosecution.

(a) All costs and expenses of Prosecution (including, for example, maintenance fees, attorney fees, filing fees and translations) under Section 8.3.1, Section 8.3.2 or Section 8.3.3 shall be paid by and are the sole responsibility of the Prosecution Party except as otherwise expressly set forth herein.

(b) If the Party with the first right to Prosecute a Patent under Section 8.3.1 or Section 8.3.2 elects not to pursue or continue the Prosecution of such Patent in a particular country, such first Party shall notify the other Party in writing at least [***] in advance of the due date of any payment or other action that is required to Prosecute such Patent, and such other Party may elect, upon written notice to such first Party, to make such payment or take such action, at such other Party's cost and expense using counsel of its own choice, in the name of the owner of the applicable Patent, and such first Party shall reasonably cooperate with such other Party in connection with such activities.

(c) While [***] is the Prosecution Party for any [***] Patents, [***] shall use commercially reasonable efforts to file separately Patents claiming any compound

that is or could reasonably be expected to become a Licensed Compound or any product that is or could reasonably be expected to become a Licensed Product. To that end, with respect to any Patent that claims any small molecule antagonist Directed to any (i) Research Target for which AbbVie then has an Option with respect to such Research Target or (ii) ROFN Target for which AbbVie then has a ROFN with respect to such ROFN Target, or any products containing such small molecule antagonist or the Exploitation of such small molecule antagonist or product, [***] shall use, and shall instruct its counsel to use, commercially reasonable efforts not to include in any such Patent any claim(s) that would cause such Patent not to become an Included Target Patent or AbbVie Prosecuted Joint Patent. Without limitation of the foregoing, promptly after the Inclusion Date for a Research Target or a ROFN Target, as applicable, [***] shall take such actions as are necessary or as [***] may reasonably request with respect to any Morphic Patents and Joint Patents, including by filing divisionals, continuations, continuations-in-part or otherwise, so as, to the extent feasible, separate into discrete Patents that specifically claim Licensed Compounds Directed to the applicable Included Target and the corresponding Licensed Products or the Exploitation of such Licensed Compounds or Licensed Products.

(d) Notwithstanding anything in this Section 8.3 to the contrary, if (i) the Option with respect to a Research Target expires without exercise by AbbVie, then from and after expiration of the applicable Option Period, any rights (including any step-in rights) of [***]to Prosecute any Morphic Patents that would have been Included Target Patents if AbbVie had exercised such Option and the obligations of Morphic to provide copies of correspondence and consult with AbbVie with respect thereto shall terminate (unless such Morphic Patents otherwise still meet or are capable of meeting the definition of "Included Target Patents", in which case such rights and obligations shall continue) and (ii) the ROFN with respect to a ROFN Target expires without agreement by the Parties on the ROFN Terms for such ROFN Target, then from and after expiration of the applicable ROFN, any rights (including any step-in rights) of [***] to Prosecute any Morphic Patents that would have been Included Target Patents if the Parties agreed on ROFN Terms for such ROFN Target and the obligations of Morphic to provide copies of correspondence and consult with AbbVie with respect thereto shall terminate (unless such Morphic Patents otherwise still meet or are capable of meeting the definition of "Included Target Patents", in which case such rights and obligations shall continue).

8.3.5. UPC Opt-Out and Opt-In. [***] shall have the first right to make decisions regarding the Opt Out or Opt-In under the UPC with respect to a [***] Patent and the sole right to make decisions regarding the Opt Out or Opt-In under the UPC with respect to a [***] Patent, and pay all additional fees associated with such decisions. If [***] decides not to make any such decision with respect to a [***] Patent, [***] shall have the right to make such decision and pay all additional fees associated therewith.

8.3.6. Cooperation. Subject to Applicable Law, the Prosecution Party for a Patent shall notify the non-Prosecution Party of all material developments and all steps to be taken in connection with the Prosecution of such Patent and provide the non-Prosecution Party with copies of all material filings or responses to be made to the patent authorities with respect thereto and all other material submissions and correspondence with any patent authorities regarding such Patent. All of the foregoing shall be provided to the non-Prosecution Party in

sufficient time to allow for review and comment by the non-Prosecution Party. The non-Prosecution Party shall offer its comments or proposals, if any, promptly, and the Prosecution Party shall consider in good faith such comments and proposals. The non-Prosecution Party shall provide the Prosecution Party with all assistance reasonably necessary to facilitate the Prosecution of Patents hereunder, including executing powers of attorney and related papers for the U.S. Patent and Trademark Office or its foreign counterparts and providing access to relevant documents and other evidence and making its employees available at reasonable business hours. Upon transfer of a Party's responsibility for Prosecution of a Patent as provided for under Section 8.3.1 or Section 8.3.2, the then-current Prosecution Party shall promptly deliver to the other Party (at the other Party's expense) or its designee copies of all necessary files related to such Patent and shall take all actions and execute all documents reasonably necessary for the other Party to assume Prosecution.

8.3.7. Patent Term Extension and Supplementary Protection Certificate. As between the Parties, [***] shall have the sole right to make decisions regarding, and to apply for, patent term extensions worldwide, including the United States with respect to extensions pursuant to 35 U.S.C. § 156 et. seq. and in other jurisdictions pursuant to supplementary protection certificates, and in all jurisdictions with respect to any other extensions that are now or become available in the future, wherever applicable, solely for the AbbVie Patents, Morphic Patents, and Joint Patents that claim any Licensed Compound or Licensed Product or the Exploitation of such Licensed Compound or Licensed Product; provided that, [***] shall consult with [***] to determine the course of action with respect to such filings. Morphic shall provide prompt and reasonable assistance, as requested by [***] and at [***] expense, including by taking such action as patent holder as is required under any Applicable Law to help [***] obtain such extension or supplementary protection certificate.

8.3.8. Patent Listings. As between the Parties, [***] shall have the sole right to make all filings with Regulatory Authorities in the Territory solely with respect to the AbbVie Patents, Morphic Patents, and Joint Patents that claim any Licensed Compound or Licensed Product or the Exploitation of such Licensed Compound or Licensed Product, including as required or allowed in the United States or other jurisdictions.

8.4. Enforcement of Patents.

8.4.1. Notice. Each Party shall promptly notify the other Party in writing of (a) any alleged or threatened infringement of the Morphic Patents, Joint Patents, or AbbVie Patents in any jurisdiction in the Territory or (b) any certification or notice filed under the Hatch-Waxman Act claiming that any Morphic Patents, Joint Patents, or AbbVie Patents are invalid or unenforceable or claiming that any Morphic Patents, Joint Patents, or AbbVie Patents would not be infringed by the making, use, offer for sale, sale, or import of a product for which an application under the Hatch-Waxman Act is filed in the United States or any equivalent or similar certification or notice in any other jurisdiction in the Territory, in each case ((a) and (b)), of which such Party becomes aware (an "**Infringement**").

8.4.2. Enforcement of Morphic Patents.

(a) Subject to Section 8.4.2(b), as between the Parties, Morphic shall have the first right, but not the obligation, to manage any claim, suit or proceeding against any Infringement (including removing or defending against any Infringement) with respect to Morphic Patents, including as a defense or counterclaim in connection with any Third Party Infringement Claim, at Morphic's sole cost and expense, using counsel of its own choice.

(b) [***] shall have the first right, but not the obligation, to manage any claim, suit or proceeding against any Infringement (including removing or defending against any Infringement) by the Exploitation of any Competing Product with respect to any Morphic Patents, including as a defense or counterclaim in connection with any Third Party Infringement Claim, at [***] sole cost and expense, using counsel of its own choice. Specifically, [***] shall have the first right, but not the obligation, to manage any claim, suit or proceeding related to any Hatch-Waxman litigation concerning a Licensed Product.

8.4.3. Enforcement of Joint Patents. As between the Parties, [***] shall have the first right, but not the obligation, to manage any claim, suit or proceeding against any Infringement (including removing or defending against any Infringement) by the Exploitation of any Competing Product with respect to Joint Patents, including as a defense or counterclaim in connection with any Third Party Infringement Claim, at [***] sole cost and expense, using counsel of its own choice.

8.4.4. Enforcement of AbbVie Patents. As between the Parties, AbbVie shall have the sole right, but not the obligation, to manage any claim, suit or proceeding against any Infringement (including removing or defending against any Infringement) with respect to the AbbVie Patents, including as a defense or counterclaim in connection with any Third Party Infringement Claim, at AbbVie's sole cost and expense, using counsel of its own choice, and AbbVie shall retain control of the prosecution of such suit and retain all recoveries in connection therewith.

8.4.5. Step-In Rights. Subject to Section 8.4.6, if [***] manages a claim, suit or proceeding against any Infringement of Morphic Patents or Joint Patent, [***] shall have the right, but not the obligation (unless [***] or any of its Affiliates is a necessary party to the proceeding), to join as a party to such claim, suit or proceeding in the Territory and participate with its own counsel at its sole cost and expense; provided, that [***] shall retain control of such claim, suit or proceeding, including the response to any defense or defense of any counterclaim raised in connection therewith. If [***] or its designee does not take commercially reasonable steps to remove or defend against an Infringement with respect to any Morphic Patents or Joint Patents (i) within [***] following the first notice provided above with respect to such Infringement or (ii) provided such date occurs after the first such notice of such Infringement is provided, [***] before the time limit, if any, set forth in appropriate laws and regulations for filing of such actions, whichever comes first, then (A) [***] shall so notify [***] and (B) upon [***] written consent (such consent not to be unreasonably conditioned, withheld or delayed), [***] may manage a claim, suit or proceeding against such Infringement at its sole cost and expense. For clarity, [***] or its designee is deemed to have taken commercially

reasonable steps to remove or defend against an Infringement if [***] or its designee has decided to initiate applicable actions against such Infringement [***] before the time limit set forth in appropriate laws and regulations and is preparing to initiate such actions within the time limit set forth in appropriate laws and regulations, all as and to the extent solely with respect to such actions.

8.4.6. Cooperation. The Parties shall cooperate in any Infringement action pursuant to this Section 8.4, including in the case of [***], by making the inventors, applicable records and documents (including laboratory notebooks) of the relevant Patents available to [***] upon [***] request. If a Party is removing or defending against an Infringement, the other Party shall, and shall cause its Affiliates to, reasonably assist and cooperate with the Party removing or defending against the Infringement, as such Party may reasonably request from time to time, in connection with its activities set forth in this Section 8.4, including where necessary, furnishing a power of attorney solely for such purpose or joining in, or being named as a necessary party to, such action, providing access to relevant documents and other evidence and making its employees available at reasonable business hours; provided, that, except with respect to Joint Patents, the Party removing or defending against the Infringement shall reimburse such other Party for its reasonable and verifiable out-of-pocket costs and expenses incurred in connection therewith. Unless otherwise set forth herein, the Party entitled to remove or defend against an Infringement in accordance with this Section 8.4 shall have the right to settle such claim; provided, that neither Party shall have the right to settle any Infringement litigation under Section 8.4.2, Section 8.4.3 or Section 8.4.5 in a manner that requires any payment by, imposes any liability on, or involves any admission by, the other Party, without the express written consent of such other Party (which consent shall not be unreasonably withheld, conditioned or delayed).

8.4.7. Recovery. Except as otherwise agreed by the Parties in connection with a cost sharing arrangement or as provided in Section 8.4.4, any recovery realized as a result of any Infringement pursuant to this Section 8.4 (whether by way of settlement or otherwise) shall be first allocated to reimburse the Parties for their reasonable and verifiable costs and expenses in making such recovery (which amounts shall be allocated pro rata if insufficient to cover the totality of such expenses). Any remainder after such reimbursement is made shall be allocated [***] to the Party initiating the suit or action and [***] to the other Party.

8.5. Invalidity or Unenforceability Defenses or Actions.

8.5.1. As between the Parties, (a) (1) prior to the Inclusion Date with respect to a Research Target or a ROFN Target (and subject to clause (2) below), [***] shall have the first right, but not the obligation, to defend (including the right to settle) and control the defense of the validity and enforceability of the Morphic Patents and Joint Patents relating to such Research Target or ROFN Target and (2) from and after the Inclusion Date with respect to an Included Target, [***] shall have the first right, but not the obligation, to defend (including the right to settle) and control the defense of the validity and enforceability of the Morphic Patents and Joint Patents relating to such Included Target, (b) [***] shall have the sole right, but not the obligation, to defend (including the right to settle) and control the defense of the validity and enforceability of all AbbVie Patents, in each case ((a) and (b)), at such Party's sole cost and

expense in the Territory and using counsel of its own choice. Notwithstanding this Section 8.5.1, the Party who prosecutes or manages a litigation with respect to an Infringement action shall be responsible for defending any invalidity or unenforceability challenges in connection with such Infringement action. If [***] or its designee elects not to defend or control the defense of a Morphic Patent or Joint Patent in a suit brought in the Territory or otherwise fails to initiate and maintain the defense of any such claim, suit or proceeding, then [***] may conduct and control the defense of any such claim, suit or proceeding at its sole cost and expense.

8.5.2. Cooperation. If a Party defends a Patent pursuant to Section 8.5.1, the other Party shall, and shall cause its Affiliates to, assist and cooperate with the defending Party, as such defending Party may reasonably request from time to time in connection with its activities set forth in this Section 8.5, including where necessary, furnishing a power of attorney solely for such purpose or joining in, or being named as a necessary party to, such action, providing access to relevant documents and other evidence and making its employees available at reasonable business hours; provided, that, except with respect to Joint Patents, the controlling Party shall reimburse such other Party for its reasonable and verifiable out-of-pocket costs and expenses incurred in connection therewith. In connection with any activities with respect to a defense relating to the Patents pursuant to this Section 8.5, the defending Party shall (a) consult with the other Party as to the strategy for such activities, (b) consider in good faith any comments from the other Party and (c) keep the other Party reasonably informed of any material steps taken and provide copies of all material documents filed, in connection with such defense. For clarity, [***] shall no longer be required to assist [***] and [***] shall no longer be obligated to consult with [***], in each case as contemplated by this Section 8.5.2, (i) if the Option with respect to a Research Target expires without exercise by AbbVie, from and after the expiration of the applicable Option Period, with respect to any Morphic Patents that would have been Included Target Patents if AbbVie had exercised such Option (unless such Morphic Patents otherwise still meet or are capable of meeting the definition of "Included Target Patents", in which case such obligations shall continue) and (ii) if the ROFN with respect to a ROFN Target expires without agreement by the Parties on the ROFN Terms for such ROFN Target, from and after expiration of the applicable ROFN, with respect to any Morphic Patents that would have been Included Target Patents if the Parties had agreed on ROFN Terms for such ROFN Target (unless such Morphic Patents otherwise still meet or are capable of meeting the definition of "Included Target Patents", in which case such obligations shall continue).

8.6. Infringement Claims by Third Parties.

8.6.1. Notice. If the Exploitation of a Licensed Product in the Territory pursuant to this Agreement results in, or is reasonably expected to result in, any claim, suit or proceeding by a Third Party alleging infringement by AbbVie or any of its Affiliates or any of its or their Sublicensees, Distributors or customers (a "**Third Party Infringement Claim**"), including any defense or counterclaim in connection with an Infringement action initiated pursuant to Section 8.4, the Party first becoming aware of such alleged infringement shall promptly notify the other Party thereof in writing.

8.6.2. Defense. As between the Parties, [***] shall have the first right, but not the obligation, to defend and control the defense of any such claim, suit or proceeding at its sole cost and expense (but subject to offset as provided below, if applicable), using counsel of its own choice. [***] may participate in any such claim, suit or proceeding with counsel of its choice at its sole cost and expense. If [***] or its designee elects (in a written communication submitted to [***] within a reasonable amount of time after notice of the alleged patent infringement) not to defend or control the defense of, or otherwise fails to initiate and maintain the defense of, any such claim, suit or proceeding with respect to a Licensed Product, such election to be made within such time periods so that [***] is not prejudiced by any delays, [***] may conduct and control the defense of any such claim, suit or proceeding at the Parties [***] cost and expense for reasonable and verifiable out-of-pocket costs and expenses incurred by [***] with respect thereto.

8.6.3. Cooperation. If a Party controls such an action, the other Party shall, and shall cause its Affiliates to, assist and cooperate with the controlling Party, as such controlling Party may reasonably request from time to time, in connection with its activities set forth in this Section 8.6, including where necessary, furnishing a power of attorney solely for such purpose or joining in, or being named as a necessary party to, such action, providing access to relevant documents and other evidence and making its employees available at reasonable business hours; provided, that the controlling Party shall reimburse such other Party for its reasonable and verifiable out-of-pocket costs and expenses incurred in connection therewith. Each Party shall keep the other Party reasonably informed of all material developments in connection with any such claim, suit or proceeding. Each Party agrees to provide the other Party with copies of all material pleadings filed in such action and to allow the other Party reasonable opportunity to participate in the defense of the claims.

8.6.4. Offset. Subject to Section 7.3.4(c), [***] shall be entitled to offset up to [***] of the reasonable out-of-pocket costs and expenses of defending or settling such claim, suit or proceeding under this Section 8.6 that are borne by [***] or its Affiliates and its or their Sublicensees in a given [***] (including royalties, milestones and other consideration paid and any damages or other awards assessed in connection therewith) against Milestone Payments payable under Section 7.2 or royalties payable under Section 7.3 for such [***], with any balance then remaining to be carried over to amounts due with respect to subsequent [***], up to a maximum amount for each [***] of [***] of the amounts owed with respect to such subsequent [***]. Notwithstanding anything to the contrary contained herein, nothing in this Section 8.6.4 shall impair the ability of [***] to seek and obtain indemnification in accordance with Section 11.2 or [***] right to offset in accordance with Section 7.14.

8.6.5. Recoveries. Any recoveries awarded to a Party in connection with any Third Party Infringement Claim defended under this Section 8.6 shall be applied first to reimburse such Party for its reasonable and verifiable out-of-pocket costs and expenses of defending such claim, suit or proceedings and then to reimburse the other Party for amounts offset pursuant to Section 8.6.4 or shared pursuant to Section 8.6.2, with the balance of any such recoveries being [***].

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

8.7. Third Party Rights. If, in the reasonable opinion of [***], the Exploitation of any Licensed Compound or Licensed Product by [***] or any of its Affiliates or any of its or their Sublicensees, Distributors or customers infringes or misappropriates or is reasonably expected to infringe or misappropriate any Patent, trade secret or other intellectual property right of a Third Party in any country in the Territory (such right, a "**Third Party Right**"), then, as between the Parties, [***] shall have the right, but not the obligation, to negotiate and obtain a license or other rights from such Third Party to such Third Party Right as necessary or desirable for [***] or its Affiliates or its or their Sublicensees, Distributors, or customers to Exploit such Licensed Compound or Licensed Products in such country. Subject to Section 7.3.4(c), if [***] negotiates and obtains any such license from a Third Party, [***] shall be entitled to deduct up to [***] of the amounts payable to such Third Party from against any amounts owed to [***] under this Agreement in accordance with Section 7.5 (and, for clarity, subject to Section 7.3.4(c)). Notwithstanding anything to the contrary contained herein, nothing in this Section 8.7 shall impair the ability of [***] to seek and obtain indemnification in accordance with Section 11.2 or [***] right to offset in accordance with Section 7.14.

8.8. Product Trademarks.

8.8.1. Ownership of Product Trademarks. Morphic hereby acknowledges and agrees that, as between the Parties, AbbVie shall have the sole right to determine and shall own all right, title and interest in and to the Trademarks (and in all domain names, URLs or social media tags, handles and other identifiers containing such Trademark), that are used or that are intended for use in connection with any Licensed Product (collectively, the "**Product Trademarks**") on a worldwide basis; provided that AbbVie shall not, and shall cause its Affiliates not to, select as a Product Trademark in a country a Trademark that is confusingly similar to, a translation or transliteration of, misleading or deceptive with respect to or that dilutes any (or any part) Trademarks Controlled by Morphic registered or pending for registration anywhere in such country at the time of such selection. Morphic shall not, and shall cause its Affiliates not to, (a) use in its or their respective businesses, any Trademark that is confusingly similar to, a translation or transliteration of, misleading or deceptive with respect to or that dilutes any (or any part) of the Product Trademarks, (b) do any act that endangers, destroys, or similarly affects, in any material respect, the Product Trademarks or the value of the goodwill pertaining to the Product Trademarks or (c) attack, dispute or contest the ownership, right to register, registration, use, right to use, duration, scope of protection for, validity or enforceability of any Product Trademarks anywhere in the Territory.

8.8.2. Registration of Product Trademarks. As between the Parties, AbbVie shall have the sole right to register, prosecute and maintain the Product Trademarks using counsel of its own choosing. All costs and expenses of registering, prosecuting, and maintaining the Product Trademarks shall be borne solely by AbbVie. Morphic shall provide all assistance and documents reasonably requested by AbbVie in support of its prosecution, registration, and maintenance of the Product Trademarks.

8.8.3. Enforcement of Product Trademarks. As between the Parties, AbbVie shall have the sole right to take such action as AbbVie, after consultation with Morphic, deems necessary against a Third Party based on any alleged, threatened, or actual infringement,

dilution, misappropriation, or other violation of, or unfair trade practices or any other like offense relating to, the Product Trademarks by a Third Party in the Territory. AbbVie shall bear the costs and expenses relating to any enforcement action commenced pursuant to this Section 8.8.3 and any settlements and judgments with respect thereto, and shall retain and any damages or other amounts collected in connection therewith.

8.8.4. Third Party Claims. As between the Parties, AbbVie shall have the sole right to defend against (including the right to settle) any alleged, threatened, or actual claim by a Third Party that the use or registration of any of the Product Trademarks in the Territory infringes, dilutes, misappropriates, or otherwise violates any Trademark or other right of that Third Party or constitutes unfair trade practices or any other like offense, or any other claims as may be brought by a Third Party against any registration or application for any of the Product Trademarks or against a Party in connection with the use of the Product Trademarks with respect to a Licensed Product in the Territory. AbbVie shall bear the costs and expenses relating to any defense commenced pursuant to this Section 8.8.4 and any settlements and judgments with respect thereto and shall retain any damages or other amounts collected in connection therewith.

8.8.5. Notice and Cooperation. Morphic shall, and shall cause its Affiliates and its and their (sub)licensees to, (a) provide prompt written notice to AbbVie of any actual or threatened infringement of the Product Trademarks in the Territory and of any actual or threatened claim that the use of the Product Trademarks in the Territory violates the rights of any Third Party and (b) assist and cooperate with AbbVie, as AbbVie may reasonably request from time to time, in connection with its activities set forth in this Section 8.8, including where necessary, furnishing a power of attorney solely for such purpose, or joining in, or being named as a necessary party to, such action, providing access to relevant documents and other evidence and making its employees available at reasonable business hours; provided, that AbbVie shall reimburse Morphic for its reasonable and verifiable out-of-pocket costs and expenses incurred in connection therewith.

ARTICLE 9
CONFIDENTIALITY AND NON-DISCLOSURE

9.1. Confidentiality Obligations.

9.1.1. At all times during from and after the Execution Date and for a period of [***] following termination or expiration of this Agreement in its entirety, each Party shall and shall cause its officers, directors, employees and agents to, keep confidential and not publish or otherwise disclose to a Third Party and not use, directly or indirectly, for any purpose, any Confidential Information furnished or otherwise made known to it, directly or indirectly, by the other Party, except to the extent such disclosure or use is expressly permitted by the terms of this Agreement. "**Confidential Information**" means any technical, business or other information provided by or on behalf of one Party or any of its Affiliates (the "**Disclosing Party**") to the other Party or any of its Affiliates (the "**Receiving Party**") in connection with this Agreement, whether prior to, on or after the Execution Date, including the terms of this Agreement (subject to Section 9.3), Information relating to any Research Product (including

Regulatory Documentation), any Development or Commercialization of any Licensed Compound or Licensed Product, any Information with respect thereto developed by or on behalf of the Disclosing Party or its Affiliates or, in the case of AbbVie, its Affiliates or its or their Sublicensees (including AbbVie's Information and Morphic Know-How, as applicable) or the scientific, regulatory or business affairs or other activities of either Party. Notwithstanding the foregoing, irrespective of the person who first disclosed it, Confidential Information constituting (a) until such time as an Option with respect to a Research Target expires without AbbVie exercising such Option, any and all Information specifically relating to such Research Target or any products Directed to such Research Target, shall, solely with respect to the confidentiality (but not use) obligations set forth in the preceding sentence, be deemed the Confidential Information of both Parties and each Party is the Disclosing Party and the Receiving Party with respect thereto, (b) any Information developed, owned or Controlled by Morphic or any of its Affiliates (including Morphic Know-How and Joint Know-How) relating to any Included Target, Licensed Compound or Licensed Product or the Exploitation thereof ("**Product Information**") shall be deemed the Confidential Information of AbbVie (and AbbVie shall be deemed to the Disclosing Party and Morphic shall be deemed the Receiving Party with respect thereto) and (c) the terms of this Agreement shall be deemed to be the Confidential Information of both Parties (and both Parties shall be deemed to be the Receiving Party and the Disclosing Party with respect thereto).

9.1.2. Notwithstanding Section 9.1.1, the confidentiality and non-use obligations under this Section 9.1 with respect to any Confidential Information shall not apply to any information that:

(a) is or hereafter becomes part of the public domain by public use, publication, general knowledge or the like through no breach of this Agreement by the Receiving Party;

(b) can be demonstrated by documentation or other competent proof to have been in the Receiving Party's possession prior to disclosure by the Disclosing Party without any obligation of confidentiality with respect to such information; provided, that the foregoing exception shall not apply with respect to Product Information or Regulatory Documentation assigned by Morphic pursuant to Section 3.1.4(e) or Section 3.2.5(e);

(c) is subsequently received by the Receiving Party from a Third Party who is not bound by any obligation of confidentiality to the Disclosing Party with respect to such information;

(d) has been published by a Third Party or otherwise enters the public domain through no fault of the Receiving Party in breach of this Agreement; or

(e) can be demonstrated by documentation or other competent evidence to have been independently developed by or for the Receiving Party without reference to the Disclosing Party's Confidential Information; provided, that the foregoing exception shall not apply with respect to Product Information or Regulatory Documentation assigned by Morphic pursuant to Section 3.1.4(e).

Specific aspects or details of Confidential Information shall not be deemed to be within the public domain or in the possession of the Receiving Party merely because the Confidential Information is embraced by more general information in the public domain or in the possession of the Receiving Party. Further, any combination of Confidential Information shall not be considered in the public domain or in the possession of the Receiving Party merely because individual elements of such Confidential Information are in the public domain or in the possession of the Receiving Party unless the combination and its principles are in the public domain or in the possession of the Receiving Party.

9.2. Permitted Disclosures. The Receiving Party may use and disclose Confidential Information of the Disclosing Party to the extent that such disclosure is:

9.2.1. made in response to a valid order of a court of competent jurisdiction or other Governmental Authority of competent jurisdiction or, if in the reasonable opinion of the Receiving Party's legal counsel, such disclosure is otherwise required by Applicable Law or the rules of a stock exchange on which the securities of the Receiving Party (or its parent entity) are listed (or to which an application for listing has been submitted); provided, however that if the Receiving Party is required to make any such disclosure of the Disclosing Party's Confidential Information, the Receiving Party shall notify the Disclosing Party in advance and give the Disclosing Party a reasonable opportunity to quash such order or to obtain a protective order or confidential treatment requiring that the Confidential Information and documents that are the subject of such order or required to be disclosed be held in confidence by such court or Governmental Authority or, if disclosed, be used only for the purposes for which the order was issued or such disclosure was required by Applicable Law or such rules; and provided, further that the Confidential Information disclosed in response to such court or governmental order or as required by Applicable Law or the rules of a stock exchange on which the securities of the Receiving Party (or its parent entity) are listed (or to which an application for listing has been submitted) shall be limited to the information that is legally required to be disclosed in response to such court or governmental order or by such Applicable Law or such rules; or

9.2.2. made by or on behalf of the Receiving Party to a patent authority as may be reasonably necessary or useful for purposes of obtaining or enforcing a Patent under this Agreement; provided, however that reasonable measures shall be taken to assure confidential treatment of such information, to the extent such protection is available.

9.3. Additional Permitted Disclosures and Use by AbbVie. AbbVie and its Affiliates and its and their Sublicensees may disclose and use Confidential Information of Morphic as may be necessary or useful in connection with the Exploitation of the Licensed Compound and Licensed Products, including in connection with any filing, application or request for Regulatory Approval by or on behalf of AbbVie or any of its Affiliates or any of its or their Sublicensees for any Licensed Product and including to existing or potential Distributors, Sublicensees, collaboration partners or acquirers or transferees; provided, that (a) subject to the following clause (b), such Persons will be subject to obligations of confidentiality and non-use with respect to such Confidential Information at least as protective to the Disclosing Party as the obligations of confidentiality and non-use of the Receiving Party pursuant to this ARTICLE 9

and (b) with respect to any such disclosure in connection with any filing, application or request for Regulatory Approval by or on behalf of AbbVie or any of its Affiliates, AbbVie shall take reasonable measures to assure confidential treatment of such information, to the extent such protection is available.

9.4. Use of Name. Except as expressly provided herein, neither Party shall mention or otherwise use the name, logo or other Trademarks of the other Party or any of its Affiliates or any of its or their (sub)licensees (or any abbreviation or adaptation thereof) in any publication, press release, marketing and promotional material or other form of publicity without the prior written approval of such other Party in each instance except to the extent otherwise agreed to by the Parties (including in an agreement other than this Agreement). The restrictions imposed by this Section 9.4 shall not prohibit (a) AbbVie from making any disclosure identifying Morphic to the extent required in connection with its exercise of its rights or obligations under this Agreement and (b) either Party from making any disclosure identifying the other Party that is required by Applicable Law or the rules of a stock exchange on which the securities of such first Party (or its parent entity) are listed (or to which an application for listing has been submitted). Without limiting the foregoing, (i) AbbVie agrees and shall cause its Affiliates and Sublicensees, to conform to the customary industry standards for the protection of the Trademarks and to such reasonable trademark usage guidelines as Morphic may furnish from time to time with respect to the use of the Corporate Names, and (ii) Morphic shall have the right to instruct AbbVie to, and AbbVie shall, discontinue a specific use of a Corporate Name; provided that, following such an instruction, AbbVie shall have the right to continue to distribute existing marketing and promotional materials and product packaging and labeling until such materials are exhausted or expire.

9.5. Public Announcements. The Parties have agreed upon the content of one (1) joint press release that shall be issued substantially in the form attached hereto as **Schedule 9.5**, the release of which the Parties shall coordinate in order to accomplish such release promptly upon a date to be mutually agreed by the Parties. Neither Party shall issue any other public announcement, press release or other public disclosure regarding this Agreement or its subject matter without the other Party's prior written consent, except for any such disclosure that is, in the opinion of the Disclosing Party's counsel, required by Applicable Law or the rules of a stock exchange on which the securities of the Disclosing Party (or its parent entity) are listed (or to which an application for listing has been submitted). If a Party is, in the opinion of its counsel, required by Applicable Law or the rules of a stock exchange on which its (or its parent entity's) securities are listed (or to which an application for listing has been submitted) to make such a public disclosure, such Party shall submit the proposed disclosure in writing to the other Party as far in advance as reasonably practicable (and in no event less than [***] prior to the anticipated date of disclosure) so as to provide a reasonable opportunity to comment thereon. Notwithstanding the foregoing, AbbVie and its Affiliates and its and their Sublicensees shall have the right to publicly disclose research, development and commercial information (including with respect to regulatory matters) regarding the Licensed Products; provided, that such disclosure is subject to the provisions of ARTICLE 9 with respect to Morphic's Confidential Information. Neither Party shall be required to seek the permission of the other Party to disclose any information regarding the terms of this Agreement or any amendment hereto that has already

been publicly disclosed by such Party or by the other Party, in accordance with this Section 9.5; provided, that such information remains accurate as of such time and provided the frequency and form of such disclosure are reasonable.

9.6. Publications. The Parties recognize the desirability of publishing and publicly disclosing the results of and information regarding, activities under this Agreement.

9.6.1. Morphic Publications. Subject to Section 9.5, Morphic shall not, and shall cause each of its Affiliates and its and their licensees and (sub)licensees not to: (a) with respect to each Research Product, prior to the earlier of the end of the Option Period for such Research Target and AbbVie's exercise of the Option for such Research Target, make any publications or public disclosures regarding such Research Target or any Research Product Directed to such Research Target without AbbVie's prior written consent (i) not to be unreasonably withheld, conditioned, or delayed with respect to such Research Target and (ii) in AbbVie's sole discretion with respect to such Research Product Directed to such Research Target and (b) with respect to each Included Target, from and after the Inclusion Date for such Included Target, make any publications or public disclosures regarding such Included Target or any Licensed Compound Directed to such Included Target or any corresponding Licensed Products without AbbVie's prior written consent in its sole discretion. Subject to the immediately preceding sentence, Morphic shall be free to publicly disclose the results of and information regarding activities under this Agreement, subject to prior review by AbbVie of any such disclosure, in a manner consistent with Applicable Law and industry practices, as provided in this Section 9.6.1. Accordingly, prior to any disclosure of the results of and Information regarding activities under this Agreement, Morphic shall provide AbbVie with drafts of proposed abstracts, manuscripts or summaries of presentations. AbbVie shall respond promptly through its designated representative and in any event no later than [***] after receipt of such proposed publication. Morphic shall allow a reasonable period (not to exceed [***]) to permit filings for patent protection and to otherwise address issues of Confidential Information or related competitive harm to the reasonable satisfaction of AbbVie.

9.6.2. AbbVie Publications. Subject to Section 9.5, with respect to each Included Target, from and after the Inclusion Date for such Included Target, AbbVie shall be free to publicly disclose the results of and information regarding activities under this Agreement with respect to such Included Target or any Licensed Compound Directed to such Included Target or any corresponding Licensed Products, subject to prior review by Morphic of any disclosure of Confidential Information of Morphic for issues of patentability and protection of such Confidential Information, in a manner consistent with Applicable Law and industry practices, as provided in this Section 9.6.2. Accordingly, prior to publishing or disclosing any Confidential Information of Morphic, AbbVie shall provide Morphic with drafts of proposed abstracts, manuscripts or summaries of presentations that cover such Confidential Information. Morphic shall respond promptly through its designated representative and in any event no later than [***] after receipt of such proposed publication or presentation or such shorter period as may be required by the publication or presentation. AbbVie shall allow a reasonable period (not to exceed [***]) to permit filings for patent protection and to otherwise address issues of Confidential Information or related competitive harm to the reasonable satisfaction of Morphic.

9.7. Return of Confidential Information. Upon the effective date of the termination of this Agreement for any reason, upon the written request of a Party, the non-requesting Party shall either, at the requesting Party's election: (a) promptly destroy all copies of the requesting Party's Confidential Information in the possession or control of the non-requesting Party and confirm such destruction in writing to the requesting Party; or (b) promptly deliver to the requesting Party, at the non-requesting Party's sole cost and expense, all copies of such Confidential Information in the possession or control of the non-requesting Party. Notwithstanding the foregoing, the non-requesting Party shall be permitted to retain such Confidential Information (x) to the extent necessary or useful for purposes of performing any continuing obligations or exercising any ongoing rights hereunder and, in any event, a single copy of such Confidential Information for archival purposes and (y) any computer records or files containing such Confidential Information that have been created solely by such non-requesting Party's automatic archiving and back-up procedures, to the extent created and retained in a manner consistent with such non-requesting Party's standard archiving and back-up procedures, but not for any other uses or purposes. All Confidential Information shall continue to be subject to the terms of this Agreement for the period set forth in Section 9.1.

ARTICLE 10
REPRESENTATIONS AND WARRANTIES

10.1. Mutual Representations and Warranties. Each Party represents and warrants to the other Party, as of the Effective Date:

10.1.1. it is duly organized, validly existing and in good standing under the Applicable Laws of the jurisdiction of its incorporation and has full corporate power and authority to enter into this Agreement and to carry out the provisions hereof;

10.1.2. the execution and delivery of this Agreement and the performance by it of the transactions contemplated hereby have been duly authorized by all necessary corporate action and do not violate: (a) such Party's charter documents, bylaws or other organizational documents; (b) in any material respect, any agreement, instrument or contractual obligation to which such Party is bound; (c) any requirement of any Applicable Law; or (d) any order, writ, judgment, injunction, decree, determination or award of any court or governmental agency presently in effect applicable to such Party; and

10.1.3. this Agreement is a legal, valid and binding obligation of such Party enforceable against it in accordance with its terms and conditions, subject to the effects of bankruptcy, insolvency or other laws of general application affecting the enforcement of creditor rights, judicial principles affecting the availability of specific performance and general principles of equity (whether enforceability is considered a proceeding at law or equity).

10.2. Additional Representations and Warranties of Morphic.

10.2.1. Morphic additionally represents and warrants to AbbVie, as of the Execution Date, that except as set forth in the disclosure schedules delivered by Morphic on the Execution Date (the "**Initial Disclosure Schedules**"):

(a) Neither Morphic nor any of its Affiliates has used any Information, inventions, materials or intellectual property in the performance of the Research Plan or otherwise with respect to any Research Product, any Research Target, any small molecule antagonist Directed to any Research Targets, any ROFN Target or any small molecule antagonist Directed to any ROFN Target identified, generated, optimized or otherwise Developed by or on behalf of Morphic or its Affiliates that is encumbered by any contractual right of or obligation to a Third Party that conflicts, diminishes or interferes with any of the rights, options or licenses granted or to be granted to AbbVie hereunder with respect to any Licensed Compounds and corresponding Licensed Products. To Morphic's Knowledge, it owns, controls or otherwise has access to all Information, inventions, materials and intellectual property required to conduct the Research Plan;

(b) All Existing Patents are listed on the Existing Patents Schedule, and all Existing Patents (i) (x) are subsisting and (y) that have issued are, to Morphic's Knowledge, valid and enforceable, (ii) are solely and exclusively owned or in-licensed pursuant to an In-License Agreement by Morphic or one of its Affiliates, free of any encumbrance, lien or claim of ownership by any Third Party, and (iii) have been filed and maintained properly and correctly and all applicable fees have been paid on or before the due date for payment. The pending applications included in Existing Patents are being diligently prosecuted in the respective patent offices in the Territory in accordance with Applicable Law and Morphic and its Affiliates have presented all references, documents and information material to patentability of which it and the inventors are aware to the relevant patent examiner at the relevant patent office and have otherwise complied with the duty of candor and good faith required under 37 C.F.R. §1.56 and analogous laws outside the United States with respect to all Existing Patents;

(c) True, complete and correct copies of (i) the file wrappers relating to the prosecution, defense, maintenance, validity and enforceability of the Existing Patents and (ii) all In-License Agreements, as amended, supplemented or modified, in each case ((i) and (ii)), have been provided by Morphic to AbbVie;

(d) A complete and accurate list of all In-License Agreements are listed on the In-License Schedule, and (i) all agreements pursuant to which Morphic or any of its Affiliates acquires, licenses or otherwise obtains from a Third Party any intellectual property rights licensed by Morphic to AbbVie hereunder, including the Morphic Patents and the Morphic Know-How, are in writing, (ii) the licenses to Morphic and its Affiliates in the In-License Agreements are in full force and effect and by their terms are (sub)licensable to AbbVie as contemplated by this Agreement, (iii) neither Morphic nor any of its Affiliates is in breach under any of the In-License Agreements, nor, to Morphic's Knowledge, is any counterparty thereto, (iv) neither Morphic nor any of its Affiliates has received any written notice of breach or default under any of the In-License Agreements from the counterparty thereto, and (v) to Morphic's Knowledge, no facts or circumstances exist that would reasonably be expected to give rise to any such breach or default. The clinical Development, Manufacture or Commercialization of the Research Products, Licensed Compounds or corresponding Licensed Products as contemplated herein will not be subject to any license or other agreement (other than the In-License

Agreements listed on the In-License Schedule) to which Morphic or any of its Affiliates is a party;

(e) The Existing Patents (and solely with respect to the conduct of the Research Plan (and not the Exploitation of a Licensed Compound or a Licensed Product containing any such Licensed Compound), Patents licensed to Morphic or its Affiliates pursuant to the CMCC Agreement) represent all Patents that Morphic or its Affiliates own, in-license or otherwise have rights to relating to any Research Product, any Research Target, any small molecule antagonist Directed to any Research Targets, any ROFN Target, any small molecule antagonist Directed to any ROFN Target or the Exploitation of any of the foregoing. To Morphic's Knowledge, there is no Information owned by or otherwise in the possession or control of Morphic or any of its Affiliates that relates to and was used by or on behalf of Morphic or its Affiliates to Develop any Research Product, any Research Target, any small molecule antagonist Directed to any Research Targets, any ROFN Target, any small molecule antagonist Directed to any ROFN Target or the Exploitation of any of the foregoing that is not within the Morphic Know-How. All intellectual property rights relating to any Research Product, any Research Target, any small molecule antagonist Directed to any Research Targets, any ROFN Target, any small molecule antagonist Directed to any ROFN Target or the Exploitation of any of the foregoing, licensed to Morphic or its Affiliates pursuant to the In-License Agreements are Controlled by Morphic and the rights and obligations of the Parties hereunder are fully consistent with and are not limited in any material respect by the In-License Agreements, including such that the rights granted to AbbVie hereunder to intellectual property licensed pursuant to an In-License Agreement are no more restricted than the analogous rights granted to AbbVie hereunder with respect to intellectual property rights wholly owned by Morphic or its Affiliates;

(f) Neither Morphic nor any of its Affiliates has previously entered into any agreement, whether written or oral, with respect to any Patent or other intellectual property or proprietary right or Information that is necessary or useful, in the case of Morphic, to conduct the Research Plan or, in the case of AbbVie, to Exploit any Licensed Compound or Licensed Product, that would be Controlled by Morphic or its Affiliates but for such agreement;

(g) Neither Morphic nor any of its Affiliates has entered into any written agreement that (i) grants any Third Party any rights of reference under or access to the Regulatory Documentation owned by, or in the possession of or under the control of, Morphic or any of its Affiliates with respect to any Research Product, any Research Target, any small molecule antagonist Directed to any Research Targets, any ROFN Target, any small molecule antagonist Directed to any ROFN Target (the "**Morphic Regulatory Documentation**") that are inconsistent with the rights granted to AbbVie hereunder, (ii) grants any Third Party any rights to or under the Existing Patents, the Morphic Know-How, any Research Product, any Research Target, any small molecule antagonist Directed to any Research Targets, any ROFN Target, any small molecule antagonist Directed to any ROFN Target or the Exploitation of any of the foregoing that are inconsistent with the rights granted to AbbVie hereunder or (iii) expressly pertains to the Exploitation of any Research Product, any Research

Target, any small molecule antagonist Directed to any Research Targets, any ROFN Target or any small molecule antagonist Directed to any ROFN Target;

(h) The practice and use of the Morphic Know-How existing as of the Effective Date and the inventions and discoveries in the Existing Patents and the conduct of Morphic or its Affiliates of its business relating to this Agreement have not and do not and, to Morphic's Knowledge, will not infringe (in each case, without giving effect to 35 U.S.C. § 271(e)(1) and any other laws of similar effect in any jurisdiction) any Patents or misappropriate or use without authorization any Information of any Third Party. (i) No claim or litigation has been brought or asserted (and Morphic has no Knowledge of any claim, whether or not brought or asserted) by any Person alleging that (x) any of the Existing Patents are invalid or unenforceable or (y) the conception, development, reduction to practice, disclosing, copying, making, assigning or licensing of the Morphic Regulatory Documentation, the Existing Patents, the Morphic Know-How, any Research Product, any Research Target, any small molecule antagonist Directed to any Research Targets, any ROFN Target, any small molecule antagonist Directed to any ROFN Target or the Exploitation of any of the foregoing as contemplated herein, violates, infringes, constitutes misappropriation or otherwise conflicts or interferes with or would violate, infringe, misappropriate or otherwise conflict or interfere with, any intellectual property or proprietary right of any Person and (ii) to Morphic's Knowledge, no facts or circumstances exist that would be reasonably expected to give rise to any such claims;

(i) There are no amounts that shall be required to be paid by AbbVie or its Affiliates or its or their Sublicensees to a Third Party as a result of the clinical Development, Manufacture or Commercialization of any Research Product, any Research Target, any small molecule antagonist Directed to any Research Targets, any ROFN Target or any small molecule antagonist Directed to any ROFN Target that arises out of any agreement to which Morphic or any of its Affiliates is a party (including the Other Morphic Agreements), except, pursuant to the exception in Section 7.15(b), to the extent reasonably allocable to AbbVie's or its Affiliates' Exploitation of a Licensed Product Directed to an Included Target in accordance with the terms to which AbbVie consented in accordance with Section 2.4.6(b);

(j) A complete and accurate list of all Other Morphic Agreements are listed on the Other Morphic Agreements Schedule. None of the rights, options and licenses granted to Morphic or its Affiliates pursuant to the Other Morphic Agreements are or will be necessary or useful for, and none of AbbVie or its Affiliates or its or their Sublicensees shall have any obligation to any party to an Other Morphic Agreement with respect to, the Exploitation of a Licensed Compound (excluding clause (b) of the definition thereof) or a Licensed Product containing any such Licensed Compound by or on behalf of AbbVie or its Affiliates or its or their Sublicensees;

(k) To Morphic's Knowledge, no Person is infringing or threatening to infringe or misappropriating or using without authorization or threatening to misappropriate or use without authorization the Existing Patents, the Morphic Know-How or the Morphic Regulatory Documentation;

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

(l) Each of the Existing Patents properly identifies each and every inventor of the claims thereof as determined in accordance with the laws of the jurisdiction in which such Existing Patent is issued or such application is pending;

(m) There are no pending or, to Morphic's Knowledge, alleged or threatened, (i) inter partes reviews, post-grant reviews, interferences, re-examinations or oppositions involving the Existing Patents that are in or before any patent authority (or other Governmental Authority performing similar functions) or (ii) any inventorship challenges involving the Existing Patents that are in or before any patent or other governmental authority;

(n) The inventions or discoveries claimed by the Existing Patents (i) were not conceived, created, discovered, developed or otherwise made in connection with any research activities funded, in whole or in part, by the federal government of the United States or any agency thereof, (ii) are not a "subject invention" as that term is described in 35 U.S.C. § 201(e), (iii) are not otherwise subject to the provisions of the Patent and Trademark Law Amendments Act of 1980, as amended, codified at 35 U.S.C. §§ 200-212, as amended, as well as any regulations and executive orders promulgated pursuant thereto, including in 37 C.F.R. part 401 (including all additions, supplements, extensions and modifications thereto) and (iv) are not the subject of any licenses, options or other rights of any other Governmental Authority, within or outside the United States, due to such Governmental Authority's funding of research and development or otherwise (other than the right to receive payments or any law of general application that applies to personal property generally, *e.g.*, takings laws). Morphic and its Affiliates have complied in all material respects with any and all obligations applicable to it as a result of the use of funding, facilities, personnel or other resources of any college, university or other educational or research institution or agency, or other organization;

(o) To the Knowledge of Morphic, no breach of any confidentiality, non-disclosure or similar agreement with any Third Party regarding Morphic Know-How has been committed by any Third Party;

(p) Morphic and its Affiliates have generated, prepared, maintained and retained all Morphic Regulatory Documentation that is required to be generated, prepared, maintained or retained pursuant to and in accordance with good laboratory and clinical practice and Applicable Law and all such information is true, complete and correct and what it purports to be in all material respects;

(q) Morphic and its Affiliates have conducted, and, to the Knowledge of Morphic, its and their respective contractors and consultants have conducted, all Development of the Research Products in accordance with good laboratory and clinical practice and Applicable Law, in all cases in all material respects;

(r) Neither Morphic nor any of its Affiliates, nor any of its or their respective officers, employees or agents has (i) committed an act, (ii) made a statement or (iii) failed to act or make a statement that, in any case ((i), (ii) or (iii)), that (x) would be or create an untrue statement of material fact or fraudulent statement to the FDA or any other Regulatory Authority with respect to the Exploitation of any Research Product or (y) could reasonably be

expected to provide a basis for the FDA to invoke its policy respecting "Fraud, Untrue Statements of Material Facts, Bribery and Illegal Gratuities", set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto or any analogous laws or policies in the Territory; and

(s) Neither Morphic nor any of its Affiliates has been debarred or is subject to debarment.

10.2.2. With respect to each Research Target, as of the Acceptance Date for the applicable Data Package with respect to such Research Target (the "**Option Bringdown Date**"), Morphic (a) represents, warrants and covenants to AbbVie that, to Morphic's Knowledge, the Exploitation of each Licensed Compound Directed to such Research Target and corresponding Licensed Product Directed to such Research Target by AbbVie or any of its Affiliates or Sublicensees to the extent related to such Licensed Compound as it exists as of the Option Bringdown Date does not and will not infringe or misappropriate any Patent or other intellectual property right of a Third Party and (b) except as set forth in the Initial Disclosure Schedules or, subject to Section 10.2.5, the Updated Research Target Disclosure Schedules, makes the representations and warranties set forth on **Schedule 10.2.2** to AbbVie; provided, that during the period from such Acceptance Date until the later of (i) the date AbbVie exercises such Option and (ii) the expiration of the applicable Option Period, Morphic shall promptly notify AbbVie in writing if any of the representations and warranties set forth on **Schedule 10.2.2** are no longer true and correct in any material respects and shall, subject to Section 10.2.5, update the Updated Research Target Disclosure Schedule to reflect any such changes.

10.2.3. With respect each ROFN Target for which AbbVie provides a ROFN Notice, as of the expiration of the later of the ROFN Period or the ROFN Negotiation Period, if applicable, for such ROFN Target (the "**ROFN Bringdown Date**"), Morphic (a) represents, warrants and covenants to AbbVie that, to Morphic's Knowledge, the Exploitation of each Licensed Compound Directed to such ROFN Target or corresponding Licensed Product Directed to such ROFN Target by AbbVie or any of its Affiliates or Sublicensees to the extent related to such Licensed Compound as it exists as of the ROFN Bringdown Date does not and will not infringe or misappropriate any Patent or other intellectual property right of a Third Party and (b) except as set forth in the Initial Disclosure Schedules or, subject to Section 10.2.5, the Updated ROFN Disclosure Schedules, makes the representations and warranties set forth on **Schedule 10.2.3** to AbbVie.

10.2.4. Subject to Section 10.2.5, Morphic shall provide AbbVie updated disclosure schedules as follows:

(a) with respect to each Research Target, with the delivery of the Data Package with respect to such Research Target or if AbbVie is considering exercising the Option for such Research Target prior to the receipt of the Data Package with respect to such Research Target, within [***] after AbbVie so notifies Morphic; provided, that if AbbVie does not exercise such Option within [***] after it provides such notice, Morphic shall have the right to provide a further updated disclosure schedule with the delivery of such Data Package or upon

AbbVie's additional notification of its considering of an earlier exercise of such Option (such updated disclosure schedules, the "**Updated Research Product Disclosure Schedules**"); and

(b) with the delivery of [***] with respect to each ROFN Target (each such updated disclosure schedules, the "**Updated ROFN Disclosure Schedules**").

10.2.5. The disclosures set forth in any Updated Disclosure Schedule shall be limited to (a) updating the Existing Patent Schedule, the In-License Schedule and the Other Morphic Agreement Schedule and (b) any matter (i) existing as of the Effective Date which, if known at the Execution Date, would have been required to be set forth or described in the Initial Disclosure Schedule or that is otherwise necessary to correct any information in the Initial Disclosure Schedule that has been rendered inaccurate by such matter or (ii) arising after the Effective Date which, if existing at the Execution Date, would have been required to be set forth or described in the Initial Disclosure Schedule or that is otherwise necessary to correct any information in the Initial Disclosure Schedule that has been rendered inaccurate by such matter, in either case, ((i) or (ii)), solely with respect to the representations and warranties set forth in the clause (i)(y) of paragraph (b); clause (iii) (solely with respect to breaches by counterparties), and clause (iv) (without limiting clause (iii)) of paragraph (d); the second sentence of paragraph (e); paragraph (h); the first sentence of paragraph (j); paragraph (k); paragraph (m); paragraph (n) (other than the last sentence); or paragraph (o) on **Schedule 10.2.2** or **Schedule 10.2.3**, as applicable, and the last sentence of paragraph (d) or paragraph (i) on **Schedule 10.2.3**. The Parties agree that any disclosure made by Morphic pursuant to an Updated Disclosure Schedule shall not be deemed to amend or supplement the Initial Disclosure Schedule or any earlier Updated Disclosure Schedule for any purpose hereunder, including for purposes of the indemnification provisions under Section 11.2. For the avoidance of doubt, an exception made by Morphic in the Updated Disclosure Schedules may not cure a deficiency in a prior Disclosure Schedule. Morphic acknowledges and agrees that any disclosure made in an Updated Disclosure Schedule cannot cure a breach of any covenant or obligation of Morphic hereunder, including Section 10.3, and no disclosure made in Updated Disclosure Schedules that relates to or reflects any such breach by Morphic shall be deemed to qualify any representation or warranty hereunder.

10.3. Additional Covenants of Morphic.

10.3.1. From and after the Execution Date, Morphic shall not, and shall cause its Affiliates not to, (a) misappropriate, infringe or use without authorization any valid and enforceable intellectual property rights of a Third Party in connection with the performance of its activities under this Agreement, (b) enter into any agreement, whether written or oral, with respect to, or otherwise assign, transfer, license, convey or otherwise encumber (including by granting any covenant not to sue with respect to) any Research Product, Licensed Compound, Licensed Product in a manner that is inconsistent with or otherwise diminishes the rights and licenses granted to AbbVie and its Affiliates hereunder; provided that, this Section 10.3.1(b) shall not restrict Morphic from entering into study-related agreements for any IIT Study or Combination Study involving products Directed to a ROFN Target that are then being Developed by Morphic or its Affiliates (but not under the Research Plan) so long as such agreements do not grant any rights or licenses for any activities other than the conduct of such

IIT Study or Combination Study, as applicable, and the non-exclusive use of data resulting therefrom by Third Parties (except and to the extent required by Applicable Law) or (c) until the end of the later of (i) the last Option Period and (ii) the later of the last ROFN Period or ROFN Negotiation Period, if applicable, otherwise commit any act or permit the occurrence of any omission that, if such action had been committed or such omission had occurred prior to the Execution Date, would have caused any of the representations and warranties of Section 10.2 to be untrue or materially misleading as of the Execution Date. From and after the Execution Date, Morphic shall not, and shall cause its Affiliates not to, (i) commit any acts or permit the occurrence of any omissions that would cause breach or termination of any In-License Agreement, (ii) amend or otherwise modify, or permit to be amended or modified, any In-License Agreement in a manner that would adversely affect AbbVie's rights hereunder or (iii) enter into any In-License Agreement (or, in the conduct of the Research Plan, use any Information, invention or material that would cause an agreement of Morphic or any of its Affiliates to become an In-License Agreement) that is not consistent with the terms and conditions of this Agreement in all material respects or that limits AbbVie's rights and interests or increases its obligations hereunder, except to the extent that such agreement and any such inconsistency, limitation or obligation is expressly agreed to in writing by AbbVie prior to execution (or, with respect to such Information, invention or material, the use thereof in the conduct of the Research Plan).

10.3.2. Neither Morphic nor any of its Affiliates shall use in any capacity, in connection with the activities to be performed under this Agreement, any Person who has been debarred pursuant to Section 306 of the FFDCA or who is the subject of a conviction described in such section. Each Party shall inform the other Party in writing promptly if it, or any of its Affiliates or any Person who is performing any activities hereunder is debarred or is the subject of a conviction described in Section 306 of the FFDCA or if any action, suit, claim, investigation or legal or administrative proceeding is pending or, to the best of its or its Affiliates' Knowledge, is threatened, relating to the debarment or conviction of it or any such Person performing activities hereunder.

10.3.3. For all Personal Data Processed by or on behalf of Morphic or any of its Affiliates in performance of this Agreement, including the preparation and transmission of the Data Packages (the "**Agreement Data**"), Morphic shall:

(a) comply at all times with the applicable Data Protection Laws;

(b) to the extent permitted by Applicable Law, notify AbbVie, as soon as practicable and in any event prior to making the relevant disclosure, if it is obliged to make a disclosure of the Agreement Data under any statutory requirement;

(c) make timely notification to, and obtain any necessary authorizations from, any relevant data protection regulator if required under applicable Data Protection Laws of its collection and other Processing of Agreement Data in order to comply with its obligations under this Agreement;

(d) at all times, act in a manner such that it is not subject to any prohibition or restriction that (i) prevents or restricts it from disclosing or transferring the Agreement Data to AbbVie as required under this Agreement or (ii) prevents or restricts AbbVie from Processing the Agreement Data as envisaged under this Agreement. If Morphic becomes aware of any circumstances that it believes may give rise to such a prohibition or restriction, it shall promptly notify AbbVie of the same and take all reasonable steps, including following AbbVie's reasonable instructions, to ensure that it does not impact its performance of Morphic's obligations under this Section 10.3.3;

(e) ensure that all fair Processing notices or informed consents have been obtained and are maintained and are sufficient in scope to enable Morphic to Process the Agreement Data as required in order to comply with its obligations under this Agreement to obtain the benefit of its rights and to fulfil its obligations under this Agreement (including the transfer or disclosure of all Agreement Data to AbbVie), in each case in accordance with applicable Data Protection Laws;

(f) implement and maintain reasonable administrative, technical, organizational and physical safeguards designed to (i) maintain the security and confidentiality of all Agreement Data, (ii) protect against reasonably anticipated threats or hazards to the security or integrity of Agreement Data and (iii) protect against unauthorized access to or use of Agreement Data;

(g) notify AbbVie promptly, and in any event within [***], of receipt of (i) any correspondence from a data protection regulator in relation to the Processing of Agreement Data related to this Agreement or (ii) a request or notice from a data subject exercising his rights under applicable Data Protection Laws including to access, rectify or delete his Agreement Data in relation to the Agreement Data Processed under this Agreement; and

(h) refrain from taking actions related to the Processing of the Personal Data under this Agreement, that would be reasonably likely to damage or impair AbbVie's reputation.

10.3.4. If Morphic or any of its Affiliates needs to transfer Agreement Data originating from a Member State of the European Economic Area to an entity in a Third Country, Morphic or its Affiliate, as applicable, shall enter into then-applicable European Union standard contractual clauses or other required agreements under applicable Data Protection Laws with the relevant data importer. The Parties agree that if the standard contractual clauses are invalidated or amended in any way, Morphic shall agree to a change to the requirements of this Agreement as required to ensure that data exports continue to be conducted in accordance with applicable Data Protection Laws.

10.4. DISCLAIMER OF WARRANTIES. EXCEPT FOR THE EXPRESS WARRANTIES SET FORTH HEREIN, NEITHER PARTY MAKES ANY REPRESENTATIONS OR GRANTS ANY WARRANTIES, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, BY STATUTE OR OTHERWISE AND EACH PARTY SPECIFICALLY DISCLAIMS ANY OTHER WARRANTIES, WHETHER

10.5. Anti-Bribery and Anti-Corruption Compliance. Each Party represents, warrants, and covenants to the other Party in connection with this Agreement that such Party and its Affiliates (a) have complied and shall comply with all applicable laws, rules, regulations and industry codes governing bribery, money laundering, and other corrupt practices and behavior (including, as applicable, the U.S. Foreign Corrupt Practices Act and UK Bribery Act) and (b) shall not, directly or indirectly, offer, give, pay, promise to pay, or authorize the payment of any bribes, kickbacks, influence payments, or other unlawful or improper inducements to any Person in whatever form (including gifts, travel, entertainment, contributions, or anything else of value). AbbVie may immediately terminate this Agreement it its entirety immediately on [***] written notice to Morphic in the event that AbbVie receives any information which it in good faith determines, in its sole discretion, to be evidence of an actual or alleged breach by Morphic or its Affiliates of any representation, warranty, or covenant provided in this Section 10.5; provided that, to the extent permitted by Applicable Law and the instructions of any applicable Governmental Authority, such notice shall set forth AbbVie's basis for such termination and AbbVie shall discuss such basis with Morphic in good faith during such [***]-period. For clarity, a termination of this Agreement pursuant to this Section 10.5 shall not in and of itself, be construed to establish that Morphic committed a material breach for which AbbVie also would have had the right to terminate this Agreement pursuant to Section 12.2.1.

ARTICLE 11
INDEMNITY

11.1. Indemnification of Morphic. AbbVie shall indemnify Morphic, its Affiliates and its and their respective directors, officers, employees and agents (collectively, "**Morphic Indemnitees**"), and defend and save each of them harmless, from and against any and all losses, damages, liabilities, costs and expenses (including reasonable attorneys' fees and expenses) (collectively, "**Losses**") in connection with any and all suits, investigations, claims or demands of Third Parties (collectively, "**Third Party Claims**") arising from or occurring as a result of [***].

11.2. Indemnification of AbbVie. Morphic shall indemnify AbbVie, its Affiliates and its and their respective directors, officers, employees and agents (collectively, "**AbbVie Indemnitees**"), and defend and save each of them harmless, from and against any and all Losses in connection with any and all Third Party Claims arising from or occurring as a result of [***].

11.3. Indemnification Procedures.

11.3.1. Notice of Claim. All indemnification claims in respect of an AbbVie Indemnitee or a Morphic Indemnitee shall be made solely by Morphic or AbbVie, as applicable (each of Morphic or AbbVie in such capacity, the "**Indemnified Party**"). The

Indemnified Party shall give the indemnifying Party (each of Morphic or AbbVie in such capacity, the "**Indemnifying Party**") prompt written notice (an "**Indemnification Claim Notice**") promptly after becoming aware of any Third Party Claim asserted or threatened against an AbbVie Indemnitee or a Morphic Indemnitee, as applicable, that could give rise to a right of indemnification under this Agreement, but in no event shall the Indemnifying Party be liable for any Losses to the extent such Losses result from any delay in the Indemnified Party providing such Indemnification Claim Notice. Each Indemnification Claim Notice must contain a description of the Third Party Claim and the nature and amount of such Loss (to the extent that the nature and amount of such Loss is known at such time). The Indemnified Party shall promptly furnish to the Indemnifying Party copies of all papers and official documents received in respect of any Losses and Third Party Claims.

11.3.2. Control of Defense. At its option, the Indemnifying Party may assume the defense of any Third Party Claim, except for any Third Party Infringement Claim, the procedures for which are set forth in Section 8.6.2, by notifying the Indemnified Party in writing within [***] after the Indemnifying Party's receipt of an Indemnification Claim Notice; provided that if the interests of the applicable Indemnified Party and any AbbVie Indemnitee or Morphic Indemnitee, as applicable, on the one hand, and the Indemnifying Party, on the other hand, with respect to such Third Party Claim are sufficiently adverse to prohibit the representation by the same counsel of all such Persons under Applicable Law, ethical rules or equitable principles, the Indemnifying Party shall control its defense and the Indemnified Party shall control the defense of the AbbVie Indemnitees or the Morphic Indemnitees, as applicable. The assumption of the defense of a Third Party Claim by the Indemnifying Party shall not be construed as an acknowledgment that the Indemnifying Party is liable to indemnify any AbbVie Indemnitee or Morphic Indemnitee, as applicable, in respect of such Third Party Claim, nor shall it constitute a waiver by the Indemnifying Party of any defenses it may assert against an AbbVie Indemnitee's or Morphic Indemnitee's, as applicable, claim for indemnification. Upon assuming the defense of a Third Party Claim, the Indemnifying Party may appoint as lead counsel in the defense of the Third Party Claim any legal counsel selected by the Indemnifying Party reasonably acceptable to the Indemnified Party. If the Indemnifying Party assumes the defense of a Third Party Claim as provided in this Section 11.3.2, the Indemnified Party shall promptly deliver to the Indemnifying Party all original notices and documents (including court papers) received by any AbbVie Indemnitee or Morphic Indemnitee, as applicable, in connection with such Third Party Claim. If the Indemnifying Party assumes the defense of a Third Party Claim, except as provided in this Section 11.3.2, the Indemnifying Party shall not be liable to the Indemnified Party for any legal expenses subsequently incurred by such Indemnified Party or any AbbVie Indemnitee or Morphic Indemnitee, as applicable, in connection with the analysis, defense or settlement of such Third Party Claim unless specifically requested in writing by the Indemnifying Party. If it is ultimately determined that the Indemnifying Party is not obligated to indemnify, defend or hold harmless an AbbVie Indemnitee or Morphic Indemnitee, as applicable, from and against a Third Party Claim, the Indemnified Party shall reimburse the Indemnifying Party for any and all costs and expenses (including attorneys' fees and costs of suit) and any Losses incurred by the Indemnifying Party in its defense of such Third Party Claim.

11.3.3. Right to Participate in Defense. Any Indemnified Party shall be entitled to participate in, but not control, the defense of a Third Party Claim and to employ counsel of its choice for such purpose; provided, that such employment shall be at the Indemnified Party's sole cost and expense unless (a) the employment thereof has been specifically authorized in writing by the Indemnifying Party, (b) the Indemnifying Party has failed to assume the defense and employ counsel in accordance with Section 11.3.2 (in which case the Indemnified Party shall control the defense) or (c) the interests of the applicable Indemnified Party and any AbbVie Indemnitee or Morphic Indemnitee, as applicable, on the one hand, and the Indemnifying Party, on the other hand, with respect to such Third Party Claim are sufficiently adverse to prohibit the representation by the same counsel of all such Persons under Applicable Law, ethical rules or equitable principles (in which case the Indemnifying Party shall control its defense and the Indemnified Party shall control the defense of the AbbVie Indemnitees or the Morphic Indemnitees, as applicable).

11.3.4. Settlement. With respect to any Third Party Claim for which the Indemnifying Party has assumed the defense of such Third Party Claim in accordance with Section 11.3.2 that relates solely to the payment of money damages in connection with such Third Party Claim and that will not result in any AbbVie Indemnitee or Morphic Indemnitee, as applicable, becoming subject to injunctive or other relief, and as to which the Indemnifying Party has acknowledged in writing the obligation to indemnify all AbbVie Indemnitees or Morphic Indemnitees, as applicable, hereunder, the Indemnifying Party shall have the sole right to consent to the entry of any judgment, enter into any settlement or otherwise dispose of such Third Party Claim, on such terms as the Indemnifying Party, in its sole discretion, shall deem appropriate; provided, that the Indemnifying Party may not enter into any compromise or settlement without the prior written consent of the Indemnified Party unless such compromise or settlement includes as an unconditional term thereof, the giving by each claimant or plaintiff to the Indemnified Party and all AbbVie Indemnitees or Morphic Indemnitees, as applicable, a release from all liability in respect of such Third Party Claim. With respect to all other Third Party Claims for which the Indemnifying Party has assumed the defense of the Third Party Claim in accordance with Section 11.3.2, the Indemnifying Party shall have authority to consent to the entry of any judgment, enter into any settlement or otherwise dispose of such Third Party Claim; provided, that it obtains the prior written consent of the Indemnified Party (which consent shall not be unreasonably conditioned, withheld or delayed). If the Indemnifying Party has assumed the defense of a Third Party Claim in accordance with Section 11.3.2, the Indemnifying Party shall not be liable for any settlement or other disposition of such Third Party Claim by an AbbVie Indemnitee or a Morphic Indemnitee, as applicable, that is reached without the prior written consent of the Indemnifying Party. Regardless of whether the Indemnifying Party chooses to defend or prosecute any Third Party Claim, the Indemnified Party shall not, and the Indemnified Party shall ensure that each AbbVie Indemnitee or Morphic Indemnitee, as applicable, does not, admit any liability with respect to, or settle, compromise or discharge, any Third Party Claim for which it has or intends to seek indemnification under Section 11.1 or Section 11.2, as applicable, without the prior written consent of the Indemnifying Party (which consent shall not be unreasonably conditioned, withheld or delayed).

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

11.3.5. Cooperation. Regardless of whether the Indemnifying Party chooses to defend or prosecute any Third Party Claim, the Indemnified Party shall and shall cause each AbbVie Indemnitee or Morphic Indemnitee, as applicable, to, cooperate in the defense or prosecution thereof and shall furnish such records, information and testimony, provide such witnesses and attend such conferences, discovery proceedings, hearings, trials and appeals as may be reasonably requested in connection therewith. Such cooperation shall include access during normal business hours on the date(s) previously discussed in good faith by the Parties, afforded to the Indemnifying Party to, and reasonable retention by the Indemnified Party and AbbVie Indemnitee or Morphic Indemnitee, as applicable, of, records and information that are reasonably relevant to such Third Party Claim and making Indemnitees and other employees and agents available on a mutually convenient basis to provide additional information and explanation of any material provided hereunder; provided, that neither Party shall be required to disclosed legally privileged information unless and until procedures reasonably acceptable to such Party are in place to protect such privilege, and the Indemnifying Party shall reimburse the Indemnified Party for all its reasonable and verifiable out-of-pocket expenses in connection therewith, without prejudice to the Indemnifying Party's right to contest any AbbVie Indemnitee's or Morphic Indemnitee's, as applicable, right to indemnification and subject to refund if the Indemnifying Party is ultimately held not to be obligated to indemnify an AbbVie Indemnitee or a Morphic Indemnitee, as applicable.

11.3.6. Expenses. Except as provided above, the costs and expenses, including fees and disbursements of counsel, incurred by the Indemnified Party in connection with any claim shall be reimbursed on a Calendar Quarter basis by the Indemnifying Party, without prejudice to the Indemnifying Party's right to contest any AbbVie Indemnitee's or Morphic Indemnitee's, as applicable, right to indemnification and subject to refund if the Indemnifying Party is ultimately held not to be obligated to indemnify an AbbVie Indemnitee or Morphic Indemnitee, as applicable.

11.4. Special, Indirect and Other Losses. EXCEPT (A) IN THE EVENT OF THE WILLFUL MISCONDUCT OR FRAUD OF A PARTY OR OF A PARTY'S BREACH OF ITS OBLIGATIONS UNDER ARTICLE 9 OR SECTION 4.5, (B) AS PROVIDED UNDER SECTION 13.10, AND (C) TO THE EXTENT ANY SUCH DAMAGES ARE REQUIRED TO BE PAID TO A THIRD PARTY AS PART OF A CLAIM FOR WHICH A PARTY PROVIDES INDEMNIFICATION UNDER THIS ARTICLE 11, NEITHER PARTY NOR ANY OF ITS AFFILIATES OR (SUB)LICENSEES SHALL BE LIABLE IN CONTRACT, TORT, NEGLIGENCE, BREACH OF STATUTORY DUTY OR OTHERWISE FOR ANY SPECIAL OR PUNITIVE DAMAGES OR FOR LOSS OF PROFITS SUFFERED BY THE OTHER PARTY IN CONNECTION WITH THIS AGREEMENT IRRESPECTIVE OF WHETHER THAT PARTY OR ANY REPRESENTATIVE OF THAT PARTY HAS BEEN ADVISED OF, OR OTHERWISE MIGHT HAVE ANTICIPATED THE POSSIBILITY OF, ANY SUCH LOSS OR DAMAGE.

11.5. Insurance.

11.5.1. Morphic's Insurance Obligations. Morphic shall maintain, at its cost, insurance against liability and other risks associated with its activities and obligations under

this Agreement, including (a) any insurance policy that is required by any Applicable Law that may govern or have jurisdiction over any provision of this Agreement, (b) Errors and Omissions insurance with a minimum limit of [***] in the aggregate (which policy shall provide coverage for wrongful acts, claims, and lawsuits anywhere in the Territory and shall be written on a claims made form that has a retroactive date prior to the Effective Date), (c) effective at least [***] prior to the launch of any human clinical trials for which Morphic or any of its Affiliates is the sponsor, clinical trial insurance with a minimum limit of [***] in the aggregate (which policy shall be maintained in compliance with any and all local requirements in any territory in which clinical trials are conducted) and (d) Network Liability/Cyber Liability Insurance with a minimum limit of [***] in the aggregate (which policy may be part of such Errors and Omissions insurance in clause (b) and which must specifically cover (i) breaches of security, (ii) breaches of privacy, (iii) violation of federal, state, or foreign security or privacy laws or regulations, including investigative and notification costs, (iv) data theft, damage, destruction, deletion, or corruption, including unauthorized access, unauthorized use, identity theft, theft of personally identifiable information, personal health information or confidential corporate information, transmission of a computer virus or other type of malicious code and (v) participation in a denial of service attack on a Third Party). All such insurance must (x) be primary insurance with respect to Morphic's participation under this Agreement, (y) be issued by a recognized insurer rated by [***] (or its equivalent) and (z) list AbbVie as an additional insured thereunder. Morphic shall furnish to AbbVie certificates evidencing such insurance within [***] after the Effective Date and following each renewal or replacement period. The foregoing policies of Morphic shall be primary to any liability insurance carried by AbbVie, which AbbVie insurance shall be excess and non-contributory for claims and losses arising out of the performance by Morphic of any of its obligations under this Agreement. Such policies shall remain in effect throughout the Term and shall not be canceled, not renewed or materially changed without the prior authorization of AbbVie. Maintenance of such insurance coverage shall not relieve Morphic of any responsibility under this Agreement for damages in excess of insurance limits or otherwise.

11.5.2. AbbVie's Insurance Obligations. AbbVie hereby represents and warrants to Morphic that it is self-insured against liability and other risks associated with its and its Affiliates' and any Sublicensees' activities and obligations under this Agreement, including clinical trials (sponsored by AbbVie in any territory or jurisdiction where such coverage is required), the Exploitation of Licensed Products and AbbVie's indemnification obligations hereunder, in such amounts and on such terms as are (a) reasonably, normal and customary for large pharmaceutical companies in the pharmaceutical industry for the activities to be conducted by it under this Agreement, and (b) otherwise required by Applicable Law. AbbVie shall furnish to Morphic evidence of such self-insurance upon Morphic's reasonable request.

ARTICLE 12
TERM AND TERMINATION

12.1. Term and Expiration. This Agreement shall take effect automatically without further action of either Party on the Effective Date; provided, however that the provisions of Section 4.5.1, Section 8.2, Section 10.3.1, Section 12.2.4, ARTICLE 9 and

ARTICLE 13 shall become binding and effective as of the Execution Date. Unless earlier terminated pursuant to Section 12.2, this Agreement shall continue in force and effect until either (a) the date of expiration of the last Royalty Term for the last Licensed Product or (b) as applicable, if all Options with respect to all Research Targets are terminated pursuant to Section 3.1.5, then this Agreement shall expire on the date of such termination of the last Option (such period, the "**Term**"). Following the expiration of the Royalty Term for a Licensed Product in a country, the grants in Section 4.1.1(b) shall become unrestricted, fully-paid, royalty-free, perpetual and irrevocable for such Licensed Product in such country. For clarity, upon the expiration of the Term, the grants in Section 4.1.1(b) shall become unrestricted, fully-paid, royalty-free, perpetual and irrevocable in their entirety.

12.2. Termination.

12.2.1. Material Breach.

(a) If either Party (the "**Breaching Party**") materially breaches any of its material obligations under this Agreement, in addition to any other right and remedy the other Party (the "**Non-Breaching Party**") may have, the Non-Breaching Party may terminate this Agreement by providing [***] (the "**Notice Period**") prior written notice (the "**Termination Notice**") to the Breaching Party and specifying the breach and its claim of right to terminate; provided, that (i) the termination shall not become effective at the end of the Notice Period if the Breaching Party cures the breach specified in the Termination Notice during the Notice Period (or, other than with respect to a payment breach, if such breach cannot be cured within the Notice Period, if the Breaching Party commences actions to cure such breach within the Notice Period and thereafter diligently continues such actions), (ii) with respect to any alleged breach by AbbVie of its diligence obligations set forth in Section 5.2 or Section 5.7.2, Morphic shall first provide written notice thereof to AbbVie and the Parties shall meet within [***] after delivery of such notice to AbbVie to discuss in good faith such alleged breach, which discussions must be concluded before Morphic may issue any Termination Notice with respect to such alleged breach (for clarity, the Notice Period shall not commence prior to the conclusion of such good faith discussions and the subsequent issuance of a Termination Notice by Morphic) and (iii) if either Party initiates a dispute resolution procedure under Section 13.5 within the Notice Period to resolve the dispute for which termination is being sought and is diligently pursuing such procedure, the cure period set forth in this Section 12.2.1(a) shall be tolled until the final resolution of the dispute through such dispute resolution procedure, and if the dispute is finally resolved against the Party allegedly in material breach, any remainder of the applicable cure period shall commence upon such final resolution. It is understood that termination pursuant to this Section 12.2.1 shall be a remedy of last resort and may be invoked if the breach cannot be reasonably remedied by the payment of money damages.

(b) Notwithstanding Section 12.2.1(a), if any uncured material breach by AbbVie of any of its material obligations under Section 5.2 or, if applicable, Section 5.7.2 is with respect to (i) one (1) or more, but not all, of the countries in the Territory for which it has diligence obligations under Section 5.2 or, if applicable, Section 5.7.2 or (ii) one (1) or more, but not all, Included Targets, Morphic shall not have the right to terminate this Agreement in its entirety, but shall have the right to terminate this Agreement solely with respect to the

country(ies) or Included Targets for which such material breach and failure to cure applies; provided that if such uncured material breach is with respect to one (1) or more Included Target(s) in any Major European Market, Morphic may terminate this Agreement with respect to such Included Target(s) in all countries of the European Union.

12.2.2. Termination by AbbVie.

(a) AbbVie may terminate this Agreement in its entirety or on an Included Target-by-Included Target basis, at any time during the Term immediately upon written notice to Morphic that AbbVie in good faith determines that it is not advisable for AbbVie to continue to Develop or Commercialize (i) all of the Licensed Products or (ii) all of the Licensed Products containing Licensed Compounds Directed to such Included Target, as applicable, in either case ((i) or (ii)), due to Safety Reasons. For purposes of this Agreement, "**Safety Reason**" means that it is AbbVie's or its Affiliate's or Sublicensee's good faith belief that the medical risk/benefit of such Licensed Compound or Licensed Product is sufficiently unfavorable to Exploit or to continue to Exploit such Licensed Compound or Licensed Product.

(b) AbbVie may terminate this Agreement in its entirety or on a (i) country-by-country basis with respect to one (1) or more (or all) Included Target(s) or (ii) Included Target-by-Included Target basis in one (1) or more countries in the Territory or in the entire Territory (provided that AbbVie may not terminate this Agreement in any country of the European Union without terminating its rights with respect to all countries in the European Union), in each case ((i) and (ii)), for any or no reason, upon [***]prior written notice to Morphic.

(c) AbbVie may terminate this Agreement pursuant to Section 10.5.

12.2.3. Termination for Insolvency. If either Party (or, if applicable, a parent of such Party) (a) files for protection under bankruptcy or insolvency laws, (b) makes an assignment for the benefit of creditors, (c) appoints or suffers appointment of a receiver or trustee over substantially all of its property that is not discharged within [***] after such filing, (d) proposes a written agreement of composition or extension of its debts, (e) proposes or is a party to any dissolution or liquidation, (f) files a petition under any bankruptcy or insolvency act or has any such petition filed against that is not discharged within [***] of the filing thereof or (g) admits in writing its inability generally to meet its obligations as they fall due in the general course, then the other Party may terminate this Agreement in its entirety effective immediately upon written notice to such Party (or, if applicable, a parent of such Party).

12.2.4. Termination for Failure or Delay to Obtain HSR Clearance. This Agreement shall terminate (a) upon notice given by AbbVie to Morphic if AbbVie receives a second request for additional information under the HSR Act (a "**Second Request**") with respect to the HSR Filing with respect to the Options and Research Targets and AbbVie delivers notice of termination within [***] after receipt of such Second Request, or (b) upon notice given by one Party to the other Party if the Effective Date has not occurred within [***] after the date on which such HSR Filing is made and such Party delivers notice of termination within [***]

after the end of such [***] period; provided, however, that if as of the end of such [***] period AbbVie is pursuing HSR Clearance with respect to the Options and Research Targets (whether by responding to a Second Request or through litigation or any other proceeding, whether judicial or administrative in nature (including an HSR Proceeding)) and AbbVie has provided written notice thereof to Morphic during such [***] period, then Morphic shall not then have the right to terminate this Agreement pursuant to this clause (b) but may terminate this Agreement upon written notice to AbbVie if the Effective Date has not occurred within [***] after the date on which such HSR Filing is made; provided, that Morphic gives AbbVie written notice thereof [***] Days after the end of such [***] period.

12.2.5. Termination for Patent Challenge. If, during the Term, AbbVie or any of its Affiliates or Sublicensees of Morphic Patents under this Agreement: (a) [***]; or (b) [***] (each of (a) and (b), a "**Patent Challenge**"), then except as otherwise set forth in this Section 12.2.5, Morphic shall have the right to terminate this Agreement upon at least [***] prior written notice to AbbVie; provided, that Morphic shall not have the right to terminate this Agreement if within [***] after receipt of such written notice from Morphic, (i) AbbVie or its Affiliate, as applicable, rescinds any and all of such Patent Challenge (or in the case of ex-parte proceedings, multi-party proceedings, or other Patent Challenges that AbbVie or such Affiliate does not have the power to unilaterally withdraw or cause to be withdrawn, AbbVie and its Affiliate, as applicable, knowingly ceases providing any support or assistance to any Person with respect to such Patent Challenge and, to the extent AbbVie or any of its Affiliates is a party to such Patent Challenge, it withdraws from such Patent Challenge) and provided, that neither AbbVie nor any AbbVie Affiliate thereafter continues such Patent Challenge or, knowingly, the provision of any direction, support or assistance to any Person in respect of the same or (ii) if such Patent Challenge is brought by a Sublicensee, AbbVie or its Affiliate terminates such Sublicensee's sublicense or other right or authorization to the relevant Patent and ceases providing any direction, support or assistance to such Sublicensee related to such Patent Challenge, unless such termination is prohibited under Applicable Law. Notwithstanding the foregoing, Morphic shall not have the right to terminate this Agreement pursuant to this Section 12.2.5 if AbbVie or its Affiliate or Sublicensee takes any action described in clause (a) or (b) of the foregoing definition of Patent Challenge (x) in a proceeding involving a Morphic Patent where AbbVie, an Affiliate or Sublicensee has been compelled to participate in the proceeding by a court, patent office, or Third Party (other than any Sublicensee) or (y) that is necessary or reasonably required to assert a cross-claim or a counterclaim or to respond to a court request or order or administrative law request or order, including asserting any defense or counterclaim in, or otherwise responding to, an action for infringement of intellectual property asserted, filed, or threatened to be filed, against AbbVie or its Affiliate or Sublicensee by Morphic or any of its Affiliates or its (sub)licensees. In addition, Morphic shall not have the right to terminate this Agreement pursuant to this Section 12.2.5 if any Affiliate that first becomes an Affiliate of AbbVie after the Effective Date was undertaking activities in connection with a Patent Challenge prior to such Affiliate first becoming an Affiliate of AbbVie if AbbVie causes such Patent Challenge to be withdrawn (or in the case of ex-parte proceedings, multi-party proceedings, or other Patent Challenges that such Affiliate does not have the power to unilaterally withdraw or cause to be withdrawn, such Affiliate knowingly ceases providing any direction, support or assistance to any Person with respect to such Patent Challenge and, to the extent such Affiliate is

a party to such Patent Challenge, it withdraws from such Patent Challenge) within the later to occur of (A) [***] of the date such Affiliate first becomes an Affiliate of AbbVie and (B) [***] following the date Morphic provides AbbVie notice regarding such Patent Challenge and in all cases, provided, that neither AbbVie nor any AbbVie Affiliate thereafter continues such Patent Challenge or, knowingly, the provision of any direction, support or assistance to any Person in respect of the same.

12.3. Rights in Bankruptcy. All rights and licenses granted under or pursuant to this Agreement by AbbVie or Morphic are and shall otherwise be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code or any analogous provisions in any other country or jurisdiction, licenses of rights to "intellectual property" as defined under Section 101 of the U.S. Bankruptcy Code. The Parties agree that the Parties, as licensees of such rights under this Agreement, shall retain and may fully exercise all of their rights and elections under the U.S. Bankruptcy Code or any analogous provisions in any other country or jurisdiction. The Parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against either Party under the U.S. Bankruptcy Code or any analogous provisions in any other country or jurisdiction, the Party that is not a party to such proceeding shall be entitled to a complete duplicate of (or complete access to, as appropriate) any such intellectual property and all embodiments of such intellectual property, which, if not already in the non-subject Party's possession, shall be promptly delivered to it (a) upon any such commencement of a bankruptcy proceeding upon the non-subject Party's written request therefor, unless the Party subject to such proceeding elects to continue to perform all of its obligations under this Agreement or (b) if not delivered under clause (a), following the rejection of this Agreement by or on behalf of the Party subject to such proceeding upon written request therefor by the non-subject Party.

12.4. Consequences of Termination. If this Agreement is terminated in its entirety, or with respect to one (1) or more Included Targets in a country or countries (such country(ies), each a "**Terminated Territory**") or one (1) or more Included Targets in one (1) or more countries (such Included Targets(s), each a "**Terminated Target**"), then the following shall apply.

12.4.1. Subject to the penultimate sentence of Section 12.1, all rights and licenses granted by each Party to the other Party under Section 4.1 shall immediately terminate (a) in the case where this Agreement is terminated in its entirety, with respect to all Licensed Products throughout the entire world and (b) in the case where this Agreement is terminated with respect to one (1) or more Included Targets in the Territory, but not in its entirety, with respect to the relevant Licensed Products Directed to such Terminated Targets. In the case where this Agreement is terminated (i) with respect to all Included Targets in one (1) or more countries, but not in its entirety, all rights and licenses granted by Morphic to AbbVie in the Terminated Territories will automatically be deemed to be amended to exclude the right to Exploit Licensed Products in the Terminated Territory(ies), except for Development or Manufacturing in the Terminated Territory(ies) solely for the purposes of supporting Regulatory Approval or Commercialization of Licensed Products in the remaining countries in the Territory and (ii) with respect to one (1) or more Included Target(s) with respect to one (1) or more countries, but not in its entirety, all rights and licenses granted by Morphic to AbbVie with respect to the Terminated

Territories will automatically be deemed to be amended to exclude the right to Exploit Licensed Products Directed to Terminated Targets in the Terminated Territory(ies), except for Development or Manufacturing in the Terminated Territory(ies) solely for the purposes of supporting Regulatory Approval or Commercialization of Licensed Products in the remaining countries in the Territory.

12.4.2. If this Agreement is terminated by AbbVie pursuant to Section 12.2.2(b) or by Morphic pursuant to Section 12.2.1, Section 12.2.3 or Section 12.2.5 with respect to an Included Target, AbbVie shall, and hereby does, effective as of the effective date of termination, grant to Morphic (a) a royalty-free, exclusive license under AbbVie's interests in the Joint IP and the clinical data referred to in Section 12.4.4 below and (b) a royalty-free, non-exclusive license under the AbbVie Patents that claim Information and inventions that are conceived, discovered, developed or otherwise made by or on behalf of AbbVie (or its Affiliates or its or their Sublicensees) under this Agreement and claim any Reversion Product Directed to such Included Target (as it exists as of the effective date of such termination), in either case ((a) or (b)), solely to Exploit each such Reversion Product (as it exists as of the effective date of such termination) in the Field for the Indications for which such Reversion Product(s), as of the effective date of termination, was being Developed or had received Regulatory Approval), which license shall be (i) worldwide in the event that this Agreement is terminated in its entirety or is terminated with respect to relevant Included Target(s) in all countries in the Territory, and (ii) limited to the Terminated Territories if this Agreement is terminated with respect to such Included Target(s) in one (1) or more Terminated Territories but not the entire Territory. Notwithstanding the foregoing, AbbVie reserves the right under AbbVie's interests in the Joint IP, the clinical data referred to in Section 12.4.4 and the AbbVie Patents described above to Develop and Manufacture Licensed Products in the Terminated Territory(ies) solely for the purposes of supporting Regulatory Approval or Commercialization of Licensed Products in the remaining countries in the Territory.

12.4.3. If Morphic requests, and to the extent permitted under the relevant agreement at the time of termination, AbbVie shall transfer to Morphic any agreements between AbbVie or any of its Affiliates, on the one hand, and any Affiliate or Third Party, on the other hand, solely relating to the Exploitation of any Reversion Product Directed to a Terminated Target worldwide or with respect to the Terminated Territory, as applicable. To the extent that the transfer by AbbVie or its Affiliate of any agreement pursuant to this Section 12.4.3 requires any notice to or consent of the relevant Third Party counterparty to such agreement, or requires the separation of such agreement into an agreement that is retained by AbbVie or its Affiliate and an agreement that is assignable to (or entered into by) Morphic, as applicable (a) AbbVie or its Affiliate shall use reasonable efforts to give such notice and (b) the Parties will reasonably cooperate to (i) obtain such consent or (ii) at the request and with the reasonable assistance of Morphic, negotiate such separation, in each case ((a) and (b)), as soon as practicable; provided, that, with respect to any agreement to be assigned by AbbVie or its Affiliate pursuant to this Section 12.4.3, neither AbbVie nor any of its Affiliates shall be required to make any payments or agree to any material undertakings in connection therewith. Until such notice is given, such consent is obtained or such separation is executed, the Parties will reasonably cooperate to provide to Morphic or its designee the benefits under such agreement (and Morphic shall bear

any corresponding burden) to the extent applicable to the rights to be assigned to Morphic or its designee.

12.4.4. AbbVie shall transfer to Morphic or Morphic's designee copies of all data, reports, records and materials, including all non-clinical and clinical data relating solely and specifically to any Reversion Product Directed to a Terminated Target and all adverse event or other safety data, in AbbVie's (or its Affiliate's) possession and Control to the extent that such data, reports, records or materials relate to the Exploitation of any Reversion Product Directed to a Terminated Target worldwide or with respect to the Terminated Territory (including any such data that is generated by or on behalf of AbbVie or its Affiliates or Sublicensees following such applicable termination date), as applicable. Promptly after termination of this Agreement with respect to an Included Target in one (1) or more Terminated Territories, but not in its entirety, the Parties shall enter into appropriate and reasonable arrangements regarding the collection, maintenance and exchange of safety data to monitor the safety of, and meet reporting requirements with respect to, Licensed Products in the Territory and Reversion Products in the Terminated Territories.

12.4.5. Unless AbbVie terminated this Agreement pursuant to Section 12.2.2(a), AbbVie and Morphic shall promptly negotiate in good faith the terms and conditions of a written transition agreement pursuant to which, at Morphic's cost and expense (or, with respect to clause (a) and (b), at AbbVie's cost and expense if this Agreement is terminated by Morphic pursuant to Section 12.2.1, Section 12.2.3 or Section 12.2.5 or by AbbVie pursuant to Section 12.2.2(b)), (a) AbbVie would transfer to Morphic or Morphic's designee possession and ownership of all Regulatory Documentation (and deliver to Morphic such Regulatory Documentation) solely relating to the Exploitation of any Reversion Product Directed to a Terminated Target worldwide or with respect to the Terminated Territory, as applicable, (b) the Parties would allocate regulatory responsibilities with respect to all Regulatory Approvals solely relating to the Exploitation of any Reversion Product Directed to a Terminated Target worldwide or with respect to the Terminated Territory, as applicable, until all such Regulatory Approvals with respect to such Reversion Product have been transferred to Morphic or Morphic's designee, and (c) if and to the extent a Reversion Product Directed to a Terminated Target is being commercially sold in a country with respect to which this Agreement is terminated, at AbbVie's election in its sole discretion, AbbVie would either (i) appoint Morphic or its designee as the exclusive distributor of such Reversion Product in such country or (ii) continue to distribute such Reversion Product in such country consistent with its past practices, in which case AbbVie shall pay Morphic royalties on Net Sales of such Reversion Product in such country at the applicable royalty rate pursuant to Section 7.3 and the provisions of Section 7.9, Section 7.10, Section 7.11, Section 7.12, Section 7.13 and Section 7.14 shall apply with respect to such royalties, in either case ((i) or (ii)), until the earlier of (A) the date on which all Regulatory Approvals with respect to such Reversion Product in such country have been transferred to Morphic or its designee to the extent permitted by Applicable Law and (B) AbbVie's election to terminate Morphic's distribution rights or AbbVie's distribution of such Reversion Product at any time after the first (1st) anniversary of the effective date of such termination.

12.4.6. If AbbVie, any of its Affiliates or any Sublicensee is Manufacturing a Reversion Product Directed to a Terminated Target, then, at Morphic's request, AbbVie shall supply such Reversion Product to Morphic in such form, and such quantities, as AbbVie or such Affiliate or Sublicensee is then Manufacturing such Reversion Product for worldwide use or use in the Terminated Territory, as applicable, at AbbVie's or such Affiliate's or Sublicensee's fully burdened manufacturing cost plus [***] (or [***] if this Agreement is terminated by Morphic pursuant to Section 12.2.1, Section 12.2.3 or Section 12.2.5 or by AbbVie pursuant to Section 12.2.2(b)), until the earlier of (a) such time as Morphic has procured or developed its own source of supply for such Reversion Product (and any necessary Manufacturing approvals with respect thereto, if applicable) and (b) the first (1st) anniversary of the effective date of such termination.

12.4.7. AbbVie shall, upon Morphic's written request, transfer to Morphic any inventory of Reversion Products Directed to a Terminated Target intended for distribution in a Terminated Territory owned or Controlled by AbbVie or any of its Affiliates or Sublicensee as of the termination date at the actual price paid by AbbVie, such Affiliate or such Sublicensee for such supply or AbbVie's or such Affiliate's or Sublicensee's fully burdened manufacturing cost plus [***] (or [***] if this Agreement is terminated by Morphic pursuant to Section 12.2.1, Section 12.2.3 or Section 12.2.5 or by AbbVie pursuant to Section 12.2.2(b)).

12.4.8. Morphic shall be responsible for long-term monitoring (for safety and efficacy) of patients who were administered Reversion Product in any clinical trial in a Terminated Territory prior to the effective date of termination with respect to the relevant Reversion Product(s) in such Terminated Territory until the later of (a) the [***] of completion of the applicable clinical trial and (b) such later date as is required by Applicable Law or, if later, that AbbVie or its Affiliate or Sublicensee previously agreed to with an applicable Regulatory Authority.

12.5. AbbVie Rights in Lieu of Termination. If AbbVie has the right to terminate this Agreement pursuant to Section 12.2.1 or Section 12.2.3, then in lieu of such termination, AbbVie may, by written notice to Morphic, elect to continue this Agreement as modified by this Section 12.5, in which case, effective as of the date AbbVie delivers such notice of such election to Morphic:

12.5.1. the amount of any Milestone Payments payable by AbbVie to Morphic pursuant to Section 7.2 for any Milestone Event achieved thereafter shall be [***] of the applicable amount set forth in Section 7.2;

12.5.2. the royalties payable by AbbVie to Morphic pursuant to Section 7.3 with respect to any Net Sales thereafter shall be equal to [***] of the applicable rate;

12.5.3. AbbVie's diligence obligations under Section 5.2 and Section 5.7.2, if applicable, shall terminate;

12.5.4. AbbVie's exclusivity obligations under Section 4.5.2 shall terminate;

12.5.5. the JGC shall disband and all activities of the Parties thereunder shall terminate; and

12.5.6. all other provisions of this Agreement shall remain in full force and effect without change.

12.6. Remedies. Except as otherwise expressly provided herein, termination of this Agreement (either in its entirety or with respect to one (1) or more Included Targets or one (1) or more countries) in accordance with the provisions hereof shall not limit remedies that may otherwise be available in law or equity.

12.7. Accrued Rights; Surviving Obligations.

12.7.1. Termination or expiration of this Agreement (either in its entirety or with respect to one (1) or more Included Targets or one (1) or more countries) for any reason shall be without prejudice to any rights that shall have accrued to the benefit of a Party prior to such termination or expiration; provided, that in no event shall Morphic accrue any rights to, and AbbVie shall have no obligation to make, any Milestone Payment under Section 7.2 based on any Milestone Event with respect to a Licensed Product containing a Licensed Compound Directed to an Included Target that occurs on or after the date of delivery by either Party of any termination notice with respect to such Included Target pursuant to Section 12.2. Such termination or expiration shall not relieve a Party from obligations that are expressly indicated to survive the termination or expiration of this Agreement. Without limiting the foregoing, in the event of a termination or expiration of this Agreement in its entirety, the following Sections and Article shall survive, and, in the event of a termination of this Agreement with respect to one (1) or more Included Targets or one (1) or more countries, the following Sections and Article shall survive with respect to such Included Targets or countries, as applicable: Section 2.4.4, Sections 7.9 - 7.15 (with respect to amounts owed for activities prior to the date of termination), Section 8.1, Sections 9.1 - 9.3, Section 9.7, Section 10.3.3, Section 12.3, Section 12.4 (including the Sections referenced therein), Section 12.6, Section 13.3.1, Sections 13.4 - 13.13, Sections 13.16 - 13.19 and this Section 12.7 and ARTICLE 11. For clarity, in the event this Agreement is terminated with respect to one (1) or more Included Targets or one (1) or more countries, this Agreement shall survive so as to preserve the Parties' rights and obligations with respect to the Included Targets and the countries that are not terminated.

12.7.2. Notwithstanding the termination of AbbVie's licenses and other rights under this Agreement, AbbVie shall have the right for [***] after the effective date of such termination to sell or otherwise dispose of all Licensed Products then in its inventory and any in-progress inventory as though this Agreement had not terminated and such sale or disposition shall not constitute infringement of Morphic's or its Affiliates' Patent or other intellectual property or other proprietary rights. For the avoidance of doubt, AbbVie shall continue to make payments thereon as provided in Section 7.3.

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

ARTICLE 13
MISCELLANEOUS

13.1. Force Majeure. Neither Party shall be held liable or responsible to the other Party or be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any term of this Agreement when such failure or delay is caused by or results from events beyond the reasonable control of the non-performing Party, including fires, floods, earthquakes, hurricanes, embargoes, shortages, epidemics, quarantines, war, acts of war (whether war be declared or not), terrorist acts, insurrections, riots, civil commotion, strikes, lockouts or other labor disturbances (whether involving the workforce of the non-performing Party or of any other Person), acts of God or acts, omissions or delays in acting by any governmental authority (except to the extent such delay results from the breach by the non-performing Party or any of its Affiliates of any term or condition of this Agreement). The non-performing Party shall notify the other Party of such force majeure within [***] after such occurrence by giving written notice to the other Party stating the nature of the event, its anticipated duration and any action being taken to avoid or minimize its effect. The suspension of performance shall be of no greater scope and no longer duration than is necessary and the non-performing Party shall use commercially reasonable efforts to remedy its inability to perform.

13.2. Export Control. This Agreement is made subject to any restrictions concerning the export of products or technical information from the United States or other countries that may be imposed on the Parties from time to time. Each Party shall not, and shall cause its Affiliates not to, export, directly or indirectly, any technical information acquired from the other Party under this Agreement or any products using such technical information to a location or in a manner that at the time of export requires an export license or other governmental approval, without first obtaining the written consent to do so from the appropriate agency or other governmental entity in accordance with Applicable Law.

13.3. Assignment.

13.3.1. Neither Party may assign its rights or, except as provided in Sections 2.4.2, Section 4.2 or Section 5.4, delegate its obligations under this Agreement, whether by operation of law or otherwise, in whole or in part without the prior written consent of the other Party, which consent shall not be unreasonably conditioned, withheld or delayed, except (a) that AbbVie shall have the right, without such consent, to perform any or all of its obligations and exercise any or all of its rights under this Agreement through any of its Affiliates or Sublicensees or Distributors, and (b) that either Party shall have the right, without such consent, to assign any or all of its rights to any successor in interest (whether by merger, acquisition, asset purchase or otherwise) to one (1) or more Licensed Products or its business generally. Any permitted successor of a Party or any permitted assignee of all of a Party's rights under this Agreement that has also assumed all of such Party's obligations hereunder in writing shall, upon any such succession or assignment and assumption, be deemed to be a party to this Agreement as though named herein in substitution for the assigning Party, whereupon the assigning Party shall cease to be a party to this Agreement and shall cease to have any rights or obligations under this Agreement; provided that with respect to an assignment to an Affiliate, the assigning Party shall remain responsible for the performance by such Affiliate of the rights and obligations hereunder.

All validly assigned rights of a Party shall inure to the benefit of and be enforceable by, and all validly delegated obligations of such Party shall be binding on and be enforceable against, the permitted successors and assigns of such Party; provided, that such Party, if it survives, shall remain jointly and severally liable for the performance of any obligations delegated to its Affiliates under this Agreement. Any attempted assignment or delegation in violation of this Section 13.3.1 shall be void and of no effect. Notwithstanding anything to the contrary in this Section 13.3.1, Morphic shall be entitled to enter into financing and sales transactions with Third Parties regarding (a) the funding of the Development Costs which Morphic may own from time to time pursuant to Section 7.8 and (b) in connection with a funding transaction described in clause (a), the assignment, pledging, and collateralization (including grants of liens, encumbrances and other charges) of the right to receive all amounts under this Agreement in connection with Morphic's interest in any Liver Fibrosis Product.

13.3.2. AbbVie and Morphic each agrees that, notwithstanding any provision of this Agreement to the contrary, if a Third Party merges or consolidates with or acquires a Party or an Affiliate of a Party, or a Party or an Affiliate of a Party transfers to a Third Party all or substantially all of its assets to which this Agreement relates (such Party or its Affiliate, the "**Acquisition Party**" and such Third Party and its Affiliates immediately prior to such merger, consolidation or transfer (the "**Acquisition Transaction**"), collectively, the "**Acquiring Entities**"), then any Patents, Information, or other intellectual property or other proprietary rights that are owned or otherwise controlled by any Pre-Transaction Entity (such Patents, Information or other intellectual property or other proprietary rights, "**Acquirer IP**") shall not be deemed Controlled by the Acquisition Party or its Affiliates after the effective date of such Acquisition Transaction for purposes of this Agreement; provided, that the foregoing exclusion (a) shall not apply to any Acquirer IP (i) used by or on behalf of the Acquisition Party or any of its Affiliates in performing any of its obligations under this Agreement or (ii) that is incorporated into any Licensed Compound or corresponding Licensed Product; and (b) shall apply only for so long as (i) no Morphic IP, Joint Patents, Joint Know-How or Product Information is disclosed to, or otherwise utilized by, any Pre-Transaction Entity, (ii) no Pre-Transaction Entity performs any activities under this Agreement and (iii) the Acquisition Party establishes reasonable internal safeguards designed to prevent any Morphic IP, Joint Know-How, Joint Patents or Product Information from being disclosed to, or otherwise utilized by, any Pre-Transaction Entities. "**Pre-Transaction Entities**" means, with respect to an Acquisition Transaction, the Acquiring Entities other than the Acquisition Party and any Affiliate of the Acquisition Party that was an Affiliate of the Acquisition Party prior to such Acquisition Transaction and any successor entity to the Acquisition Party or any such Affiliates thereof.

13.4. Severability. If any provision of this Agreement is held to be illegal, invalid or unenforceable under any present or future law and if the rights or obligations of either Party under this Agreement will not be materially and adversely affected thereby, (a) such provision shall be fully severable, (b) this Agreement shall be construed and enforced as if such illegal, invalid or unenforceable provision had never comprised a part hereof, (c) the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid or unenforceable provision or by its severance herefrom and (d) in lieu of such illegal, invalid or unenforceable provision, there shall be added automatically as a part of this

Agreement a legal, valid and enforceable provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible and reasonably acceptable to the Parties. To the fullest extent permitted by Applicable Law, each Party hereby waives any provision of law that would render any provision hereof illegal, invalid or unenforceable in any respect.

13.5. Dispute Resolution. Except for disputes resolved by the procedures set forth in Section 6.2.3, Section 7.13.2 or Section 13.10, if a dispute arises between the Parties in connection with or relating to this Agreement or any document or instrument delivered in connection herewith (a "**Dispute**"), it shall be resolved pursuant to this Section 13.5.

13.5.1. General. Any Dispute shall first be referred to the [***], who shall confer in good faith on the resolution of such Dispute. Any final decision mutually agreed to by the [***] in writing shall be conclusive and binding on the Parties. If the [***] are not able to agree on the resolution of any such Dispute within [***] (or such other period of time as mutually agreed by the Senior Officers) after such Dispute was first referred to them, then, except as otherwise set forth in Section 13.5.2, either Party may, by written notice to the other Party, elect to initiate an alternative dispute resolution ("**ADR**") proceeding pursuant to the procedures set forth in **Schedule 13.5.3** for purposes of having the matter settled.

13.5.2. Intellectual Property Disputes. If a Dispute arises with respect the validity, scope, enforceability, inventorship or ownership of any Patent, Trademark or other intellectual property rights, and such Dispute cannot be resolved in accordance with Section 13.5.1, unless otherwise agreed by the Parties in writing, such Dispute shall not be submitted to an ADR proceeding in accordance with Section 13.5.3 and instead, either Party may initiate litigation in a court of competent jurisdiction, notwithstanding Section 13.6, in any country or other jurisdiction in which such rights apply.

13.5.3. ADR. Any ADR proceeding under this Agreement shall take place pursuant to the procedures set forth in **Schedule 13.5.3**.

13.5.4. Adverse Ruling. Any determination pursuant to this Section 13.5 that a Party is in material breach of its material obligations hereunder shall specify a (nonexclusive) set of actions to be taken to cure such material breach, if feasible.

13.5.5. Interim Relief. Notwithstanding anything herein to the contrary, nothing in this Section 13.5 shall preclude either Party from seeking interim or provisional relief, including a temporary restraining order, preliminary injunction or other interim equitable relief concerning a Dispute, if necessary to protect the interests of such Party. This Section 13.5.5 shall be specifically enforceable.

13.6. Governing Law.

13.6.1. Governing Law. This Agreement or the performance, enforcement, breach or termination hereof shall be interpreted, governed by and construed in accordance with the laws of the State of New York, United States, excluding any conflicts or choice of law rule or principle that might otherwise refer construction or interpretation of this

Agreement to the substantive law of another jurisdiction; provided, that all questions concerning (a) inventorship and ownership of Patents under this Agreement shall be determined in accordance with Section 8.1 and (b) the construction or effect of Patents shall be determined in accordance with the laws of the country or other jurisdiction in which the particular Patent has been filed or granted, as the case may be. The Parties agree to exclude the application to this Agreement of the United Nations Convention on Contracts for the International Sale of Goods.

13.7. Notices.

13.7.1. Notice Requirements. Any notice, request, demand, waiver, consent, approval or other communication permitted or required under this Agreement shall be in writing, shall refer specifically to this Agreement and shall be deemed given only if delivered by hand or sent by facsimile transmission (with transmission confirmed) or by internationally recognized overnight delivery service that maintains records of delivery, addressed to the Parties at their respective addresses specified in Section 13.7.2 or to such other address as the Party to whom notice is to be given may have provided to the other Party in accordance with this Section 13.7.1. Such notice shall be deemed to have been given as of the date delivered by hand or transmitted by facsimile (with transmission confirmed) or on the second Business Day (at the place of delivery) after deposit with an internationally recognized overnight delivery service. Any notice delivered by facsimile shall be confirmed by a hard copy delivered as soon as practicable thereafter. This Section 13.7.1 is not intended to govern the day-to-day business communications necessary between the Parties in performing their obligations under the terms of this Agreement.

13.7.2. Address for Notice.

If to AbbVie, to:

AbbVie Biotechnology Limited
Clarendon House
2 Church Street
Hamilton HM11
Bermuda
Attention: Codan Services Limited
Facsimile: [***]

with a copy (which shall not constitute notice) to:

AbbVie Inc.
1 North Waukegan Road
North Chicago, Illinois 60064
United States
Attention: Executive Vice President, External Affairs, General Counsel and Corporate Secretary
Facsimile: [***]

If to Morphic, to:

Morphic Therapeutic, Inc.
35 Gatehouse Drive, A-2
Waltham, MA 02451
Attention: Chief Executive Officer
Facsimile: [***]

with a copy (which shall not constitute notice) to:
Dechert LLP
1900 K Street, NW
Washington, DC 20006
Attention: David E. Schulman
Facsimile: 202-261-3334

13.8. Entire Agreement; Amendments. This Agreement, together with the Schedules attached hereto, sets forth and constitutes the entire agreement and understanding between the Parties with respect to the subject matter hereof and all prior agreements, understandings, promises and representations, whether written or oral, with respect thereto are superseded hereby, including that certain Bilateral Confidential Disclosure Agreement between Morphic and AbbVie Inc. dated November 16, 2017. Each Party confirms that it is not relying on any representations or warranties of the other Party except as specifically set forth in this Agreement. No amendment, modification, release or discharge shall be binding upon the Parties unless in writing and duly executed by authorized representatives of both Parties. In the event of any inconsistencies between this Agreement and any schedules or other attachments hereto, the terms of this Agreement shall control.

13.9. English Language. This Agreement shall be written and executed in, and all other communications under or in connection with this Agreement shall be in, the English language. Any translation into any other language shall not be an official version thereof and in the event of any conflict in interpretation between the English version and such translation, the English version shall control.

13.10. Equitable Relief. (a) Each Party acknowledges and agrees that the restrictions and obligations set forth in Section 4.5 and ARTICLE 8 and ARTICLE 9 and (b) Morphic acknowledges and agrees that the restrictions, rights and obligations set forth in ARTICLE 2 and Section 5.3, in each case ((a) and (b)), are reasonable and necessary to protect the legitimate interests of the other Party (in the case of (a)) or AbbVie (in the case of (b)) and that such other Party (in the case of (a)) or AbbVie (in the case of (b)) would not have entered into this Agreement in the absence of such restrictions and that any breach or threatened breach of any provision of such Section or Article shall result in irreparable injury to such other Party (in the case of (a)) or AbbVie (in the case of (b)) for which there shall be no adequate remedy at law. In the event of a breach or threatened breach of any provision of such Section or Articles, the non-breaching Party shall be authorized and entitled to obtain from any court of competent jurisdiction injunctive relief, whether preliminary or permanent, specific performance and an

equitable accounting of all earnings, profits and other benefits arising from such breach, which rights shall be cumulative and in addition to any other rights or remedies to which such non-breaching Party may be entitled in law or equity. Each Party (in the case of (a)) or Morphic (in the case of (b)) hereby waives any requirement that the other Party (in the case of (a)) or AbbVie (in the case of (b)) (x) post a bond or other security as a condition for obtaining any such relief and (y) show irreparable harm, balancing of harms, consideration of the public interest or inadequacy of monetary damages as a remedy. Nothing in this Section 13.10 is intended or should be construed, to limit either Party's right to equitable relief or any other remedy for a breach of any other provision of this Agreement.

13.11. Waiver and Non-Exclusion of Remedies. Any term or condition of this Agreement may be waived at any time by the Party that is entitled to the benefit thereof, but no such waiver shall be effective unless set forth in a written instrument duly executed by or on behalf of the Party waiving such term or condition. The waiver by either Party of any right hereunder or of the failure to perform or of a breach by the other Party shall not be deemed a waiver of any other right hereunder or of any other breach or failure by such other Party whether of a similar nature or otherwise. The rights and remedies provided herein are cumulative and do not exclude any other right or remedy provided by Applicable Law or otherwise available except as expressly set forth herein.

13.12. No Benefit to Third Parties. Except as provided in ARTICLE 11, the covenants and agreements set forth in this Agreement are for the sole benefit of the Parties and their successors and permitted assigns and they shall not be construed as conferring any rights on any other Persons.

13.13. Further Assurance. Each Party shall duly execute and deliver or cause to be duly executed and delivered, such further instruments and do and cause to be done such further acts and things, including the filing of such assignments, agreements, documents and instruments, as may be necessary or as the other Party may reasonably request in connection with this Agreement or to carry out more effectively the provisions and purposes hereof or to better assure and confirm unto such other Party its rights and remedies under this Agreement.

13.14. Relationship of the Parties. It is expressly agreed that Morphic, on the one hand, and AbbVie, on the other hand, shall be independent contractors, that the relationship between the two Parties shall not constitute a partnership, joint venture or agency, including for all tax purposes, and that neither Party shall take the position that the relationship between the Parties constitutes a partnership, joint venture or agency as a result of this Agreement unless otherwise required by a "determination" (within the meaning of Section 1313(a) of the Internal Revenue Code of 1986, as amended). Neither Morphic, on the one hand, nor AbbVie, on the other hand, shall have the authority to make any statements, representations or commitments of any kind, or to take any action that shall be binding on the other, without the prior written consent of the other Party to do so. All persons employed by a Party shall be employees of such Party and not of the other Party and all costs and obligations incurred by reason of any such employment shall be for the account and expense of such first Party.

13.15. HSR Act Compliance.

13.15.1. Each of AbbVie and Morphic shall make an HSR Filing within [***] after (a) with respect to the Options and the Research Targets, the Execution Date, unless the Parties together determine that no HSR Filing is required for the activities and licenses contemplated under this Agreement with respect to the Options and the Research Targets and (b) with respect to each ROFN Target and the corresponding ROFN Terms (if agreed), the date such ROFN Terms are agreed by the Parties, unless AbbVie determines that no HSR Filing is required for the activities and licenses contemplated by such ROFN Terms. The Parties shall cooperate with one another to the extent necessary in the preparation of any such filings. Each Party shall be responsible for its own costs and expenses associated with any such filings.

13.15.2. In connection with obtaining HSR Clearance, AbbVie and Morphic shall each use commercially reasonable efforts to resolve as promptly as practicable any objections that may be asserted by the FTC or the DOJ with respect to the transactions notified in the HSR Filings. Nothing in this Section 13.15 or otherwise in this Agreement shall require AbbVie to (a) offer, accept or agree to sell, divest (including through a license or a reversion of licensed or assigned rights), hold separate, transfer, or dispose of any assets, operations, rights, product lines, or businesses, or interests therein, of itself or any of its Affiliates (or consent to any of the foregoing actions), (b) offer, accept or agree to any restraint, prohibition or limitation on the ownership, operation or conduct of all or any portion of the businesses or assets of itself or any of its Affiliates in any part of the world or (c) litigate or otherwise formally oppose any determination (whether judicial or administrative in nature) by a governmental authority seeking to impose any of the restrictions referenced in clause (a) or (b) (such litigation or judicial or administrative proceeding, an "**HSR Proceeding**").

13.15.3. In connection with obtaining HSR Clearance, each of AbbVie and Morphic shall (a) cooperate with each other in connection with any investigation or other inquiry relating to an HSR Filing and the transactions contemplated by this Agreement; (b) keep the other Party or its counsel informed of any material communication received from or given to the FTC or DOJ relating to the HSR Filings and the transactions contemplated by this Agreement (and provide a copy to the other Party if such material communication is in writing); (c) reasonably consult with each other in advance of any meeting or conference with the FTC or DOJ, and, to the extent permitted by the FTC or DOJ, give the other Party or its counsel the opportunity to attend and participate in such meetings and conferences; and (d) permit the other Party or its counsel to review in advance, and in good faith consider the views of the other Party or its counsel concerning, any submission, filing or communication (and documents submitted therewith) intended to be given to the FTC or DOJ. Without limiting the foregoing, Morphic shall cooperate fully in any HSR Proceeding initiated by AbbVie; provided, that Morphic shall not agree to or effectuate any remedy without the prior written consent of AbbVie.

13.15.4. Notwithstanding anything to the contrary, this Agreement and the rights and obligations of the Parties hereunder, except as set forth in Section 4.5.1, Section 8.2, Section 10.3.1, Section 12.2.4, ARTICLE 9 and ARTICLE 13, shall not become effective until the Effective Date of this Agreement.

13.16. References. Unless otherwise specified, (a) references in this Agreement to any Article, Section or Schedule shall mean references to such Article, Section or Schedule of this Agreement, (b) references in any Section to any clause are references to such clause of such Section and (c) references to any agreement, instrument or other document in this Agreement refer to such agreement, instrument or other document as originally executed or, if subsequently amended, replaced or supplemented from time to time, as so amended, replaced or supplemented and in effect at the relevant time of reference thereto.

13.17. Construction. Except where the context otherwise requires, wherever used, the singular shall include the plural, the plural the singular, the use of any gender shall be applicable to all genders and the word "or" is used in the inclusive sense (and/or). Whenever this Agreement refers to a number of days, unless otherwise specified, such number refers to calendar days. The captions of this Agreement are for convenience of reference only and in no way define, describe, extend or limit the scope or intent of this Agreement or the intent of any provision contained in this Agreement. The term "including," "include," or "includes" as used herein shall mean including, without limiting the generality of any description preceding such term. All references to "will" are interchangeable with the word "shall" and shall be understood to be imperative or mandatory in nature. The language of this Agreement shall be deemed to be the language mutually chosen by the Parties and no rule of strict construction shall be applied against either Party.

13.18. Performance by Affiliates. AbbVie may use one (1) or more of its Affiliates to perform its obligations and duties hereunder and such AbbVie Affiliates are expressly granted certain rights herein; provided, that each such Affiliate will be bound by the corresponding obligations of AbbVie and, subject to an assignment to such Affiliate pursuant to Section 13.3, AbbVie will remain liable hereunder for the prompt payment and performance of all their respective obligations hereunder.

13.19. Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Agreement may be executed by facsimile, .pdf format via email or other electronically transmitted signatures and such signatures shall be deemed to bind each Party hereto as if they were original signatures.

[SIGNATURE PAGE FOLLOWS.**]**

THIS AGREEMENT IS EXECUTED by the authorized representatives of the Parties as of the Execution Date.

ABBVIE BIOTECHNOLOGY LTD		**MORPHIC THERAPEUTIC, INC.**	
By:		By:	/s/ Praveen Tipirneni
Name:		Name:	Praveen Tipirneni
Title:		Title:	CEO

[Signature Page to Collaboration and Option Agreement]

Schedule 1.12
Advancement Criteria

[***]

Schedule 1.38
Corporate Names

Morphic Therapeutic, Inc.

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

Schedule 1.50
Selectivity Profile

[***]

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Schedule 1.66
Existing Patents

[***]

Schedule 1.83
In-Licenses

None.

Schedule 1.92
Indications

The following examples are provided to be illustrative of what the Parties view as separate and distinct Indications as further defined in Section 1.92. This list is not meant to represent an exhaustive list of Indications, nor does it meant to indicate a commitment to research or development of any Research Product, Licensed Compound, or Licensed Product in the below Indications.

[***]

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Schedule 1.98
Integrin Conformational Stabilization Patents

[***]

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Schedule 1.139
Other Morphic Agreements

- CMCC Agreement
- Collaboration Agreement, dated as of June 10, 2015 and amendment March 9, 2018, between Morphic or its Affiliates and Schrödinger, LLC
- Master Services Agreement, dated as of June 9, 2015 and amended on September 14, 2018, between Morphic on one hand, and ChemExplorer Company Limited and Shanghai ChemPartner Co., Ltd., on the other hand, and associated work orders
- Consulting Agreement, dated as of June 1, 2015, between Timothy A. Springer and Morphic or its Affiliates

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

Schedule 1.164

[***]

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Schedule 7.3

[***]

Schedule 9.5
Press Release

DRAFT FOR REVIEW, NOT FOR PUBLIC RELEASE

AbbVie and Morphic Therapeutic Announce Collaboration Targeting Fibrotic Diseases

Collaboration leverages Morphic's unique platform for developing oral integrin drugs and AbbVie's global development and commercialization capabilities

NORTH CHICAGO, Ill. and WALTHAM, Mass. — October XX, 2018 — AbbVie (NYSE: ABBV), a research-based global biopharmaceutical company, and Morphic Therapeutic, a biotechnology company developing oral integrin therapies, announced today that the companies have entered into a research and development collaboration designed to advance a number of Morphic's oral integrin therapeutics for fibrosis-related indications.

Fibrosis occurs when chronic inflammation or persistent injury leads to the development of excessive connective tissue, which can lead to organ damage and impaired function. Fibrotic diseases can affect nearly all tissues and organ systems and, due to limited treatment options, can cause serious illness and death.

Morphic Therapeutic has developed a unique platform for designing integrin oral inhibitors to block TGF-β activation, thought to be a key approach to halt or reverse fibrosis, in a tissue-specific manner.

"We welcome the global scientific and clinical development expertise of AbbVie as a strategic collaborator and look forward to investigating together the role of integrin biology in the potential treatment of multiple devastating human diseases involving fibrosis," said Praveen Tipirneni, M.D., president and chief executive officer, Morphic Therapeutic. "Combined with our recent financing, we are in an excellent position to further the development of our pipeline and more fully extract value from what we believe is the world's only broad-based structure enabled integrin drug discovery platform."

"Fibrosis represents a major area of medical need as it can impact nearly every major organ system and has limited targeted treatments to address the underlying cause," said Lisa Olson, Ph.D., vice president, immunology discovery, AbbVie. "We believe that integrin biology could play an important role in the future treatment paradigm of serious immune-mediated diseases where fibrotic mechanisms contribute to the pathology. We are pleased to partner with the team at Morphic to develop therapies together for patients with these serious conditions."

Under the terms of the agreement, AbbVie will pay Morphic an upfront payment of $100 million for exclusive license options on product candidates directed at multiple targets. For each compound, Morphic will conduct R&D activities through the completion of Investigational New Drug (IND)-enabling studies, at which point AbbVie may pay a license fee to exercise its exclusive license option and assume responsibility for global development and commercialization. Morphic is also eligible for additional, undisclosed clinical and commercial milestone payments and tiered royalties on worldwide net sales for each compound. Morphic retains cost-sharing rights in the development of liver fibrosis indications, and may opt into paying a percentage of AbbVie's development costs in exchange for enhanced royalties. The transaction is subject to clearance under the Hart-Scott-Rodino Antitrust Improvements Act.

Prior to this collaboration, AbbVie Ventures was an investor in Morphic Therapeutic's Series A and Series B financing.

About Integrins

Integrins are a ubiquitous family of receptors expressed on the surface of most human cells. Integrin signaling controls a wide range of cellular processes, including cell survival, cell cycle progression, immune system activation, cell differentiation and cell migration. Aberrant signaling contributes to a diverse array of human diseases, including each of Morphic Therapeutic's focus areas of fibrosis, autoimmune diseases and immuno-oncology.

Research in the Springer laboratory has demonstrated that, historically, compounds designed to turn off integrin activity inadvertently worked to promote it, leading to the subsequent failure of oral drug candidates directed at integrin targets. Morphic is leveraging a platform with the potential to develop oral integrin antagonists which avoids these inadvertent activities that have hindered previous development of effective oral integrin therapeutics.

About AbbVie

AbbVie is a global, research and development-based biopharmaceutical company committed to developing innovative advanced therapies for some of the world's most complex and critical conditions. The company's mission is to use its expertise, dedicated people and unique approach to innovation to markedly improve treatments across four primary therapeutic areas: immunology, oncology, virology and neuroscience. In more than 75 countries, AbbVie employees are working every day to advance health solutions for people around the world. For more information about AbbVie, please visit us at www.abbvie.com. Follow @abbvie on Twitter, Facebook, LinkedIn or Instagram.

About Morphic Therapeutic

Morphic Therapeutic is a biotechnology company developing a new generation of oral integrin therapies. Drawing on integrin biology breakthroughs from the lab of noted entrepreneur and scientific founder Tim Springer, Morphic has developed an exclusive platform to build on these discoveries, complemented by a partnership with computational chemistry leader Schrödinger, Inc., that facilitates the rapid and iterative design of clinical candidates. For more information, visit www.morphictx.com.

AbbVie Forward-Looking Statements

Some statements in this news release are, or may be considered, forward-looking statements for purposes of the Private Securities Litigation Reform Act of 1995. The words "believe," "expect," "anticipate," "project" and similar expressions, among others, generally identify forward-looking statements. AbbVie cautions that these forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those indicated in the forward-looking statements. Such risks and uncertainties include, but are not limited to, challenges to intellectual property, competition from other products, difficulties inherent in the research and development process, adverse litigation or government action, and changes to laws and regulations applicable to our industry. Additional information about the economic, competitive, governmental, technological and other factors that may affect AbbVie's operations is set forth in Item 1A, "Risk Factors," of AbbVie's 2017 Annual Report on Form 10-K, which has been filed with the Securities and Exchange Commission. AbbVie undertakes no obligation to release publicly any revisions to forward-looking statements as a result of subsequent events or developments, except as required by law.

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781-996-0955

Morphic Media Contact:
Tom Donovan, Ten Bridge Communications
tom@tenbridgecommunications.com
857-559-3397

Schedule 10.2.1
Initial Disclosure Schedules

[***]

Schedule 10.2.2
Representations and Warranties as of the Option Bringdown Date

Morphic additionally represents and warrants to AbbVie, as of the Option Bringdown Date with respect to a Research Target, that except as set forth in the Updated Research Target Disclosure Schedules provided as of such Option Bringdown Date:

(a) Neither Morphic nor any of its Affiliates has used any Information, inventions, materials or intellectual property in the performance of the Research Plan with respect to such Research Target or otherwise with respect to any Research Product Directed to such Research Target that is encumbered by any contractual right of or obligation to a Third Party that conflicts, diminishes or interferes with any of the rights, options or licenses granted or to be granted to AbbVie hereunder with respect to any Licensed Compound or Licensed Product Directed to such Research Target;

(b) All Existing Patents are listed on the Existing Patents Schedule, and all Existing Patents (i) (x) are subsisting and (y) that have issued are, to Morphic's Knowledge, valid and enforceable, (ii) are solely and exclusively owned or in-licensed pursuant to an In-License Agreement by Morphic or one of its Affiliates, free of any encumbrance, lien or claim of ownership by any Third Party, and (iii) have been filed and maintained properly and correctly and all applicable fees have been paid on or before the due date for payment. The pending applications included in Existing Patents are being diligently prosecuted in the respective patent offices in the Territory in accordance with Applicable Law and Morphic and its Affiliates have presented all references, documents and information material to patentability of which it and the inventors are aware to the relevant patent examiner at the relevant patent office and have otherwise complied with the duty of candor and good faith required under 37 C.F.R. §1.56 and analogous laws outside the United States with respect to all Existing Patents;

(c) True, complete and correct copies of (i) the file wrappers relating to the prosecution, defense, maintenance, validity and enforceability of the Existing Patents and (ii) all In-License Agreements, as amended, supplemented or modified, in each case ((i) and (ii)), have been provided by Morphic to AbbVie;

(d) A complete and accurate list of all In-License Agreements are listed on the In-License Schedule, and (i) all agreements pursuant to which Morphic or any of its Affiliates acquires, licenses or otherwise obtains from a Third Party any intellectual property rights licensed by Morphic to AbbVie hereunder, including the Morphic Patents and the Morphic Know-How, are in writing, (ii) the licenses to Morphic and its Affiliates in the In-License Agreements are in full force and effect and by their terms are (sub)licensable to AbbVie as contemplated by this Agreement, (iii) neither Morphic nor any of its Affiliates is in breach under any of the In-License Agreements, nor, to Morphic's Knowledge, is any counterparty thereto, (iv) neither Morphic nor any of its Affiliates has received any written notice of breach or default under any of the In-License Agreements from the counterparty thereto, and (v) to Morphic's Knowledge, no facts or circumstances exist that would reasonably be expected to give rise to any such breach or default. The clinical Development, Manufacture or Commercialization of the Research Products Directed to such Research Target, Licensed Compounds Directed to such Research Target or corresponding Licensed Products Directed to such Research Target as

contemplated herein will not be subject to any license or other agreement (other than the In-License Agreements listed on the In-License Schedule) to which Morphic or any of its Affiliates is a party;

(e) The Existing Patents (and solely with respect to the conduct of the Research Plan (and not the Exploitation of a Licensed Compound or a Licensed Product containing any such Licensed Compound), Patents licensed to Morphic or its Affiliates pursuant to the CMCC Agreement) represent all Patents that Morphic or its Affiliates own, in-license or otherwise have rights to relating to such Research Target and any Research Product Directed to such Research Target or the Exploitation of either of the foregoing. To Morphic's Knowledge, there is no Information owned by or otherwise in the possession or control of Morphic or any of its Affiliates that relates to and was used by or on behalf of Morphic or its Affiliates to Develop such Research Target or any Research Product Directed to such Research Target or the Exploitation of either of the foregoing that is not within the Morphic Know-How. All intellectual property rights relating to such Research Target and any Research Product Directed to such Research Target or the Exploitation of either of the foregoing, licensed to Morphic or its Affiliates pursuant to the In-License Agreements are Controlled by Morphic and the rights and obligations of the Parties hereunder are fully consistent with and are not limited in any material respect by the In-License Agreements, including such that the rights granted to AbbVie hereunder to intellectual property licensed pursuant to an In-License Agreement are no more restricted than the analogous rights granted to AbbVie hereunder with respect to intellectual property rights wholly owned by Morphic or its Affiliates;

(f) Neither Morphic nor any of its Affiliates has previously entered into any agreement, whether written or oral, with respect to any Patent or other intellectual property or proprietary right or Information that is necessary or useful, in the case of Morphic, to conduct the Research Plan or, in the case of AbbVie, to Exploit any Licensed Compound Directed to such Research Target or Licensed Product Directed to such Research Target, that would be Controlled by Morphic or its Affiliates but for such agreement;

(g) Neither Morphic nor any of its Affiliates has entered into any written agreement that (i) grants any Third Party any rights of reference under or access to the Morphic Regulatory Documentation with respect to such Research Target or any Research Product Directed to such Research Target that are inconsistent with the rights granted to AbbVie hereunder, (ii) grants any Third Party any rights to or under the Existing Patents, the Morphic Know-How, such Research Target or any Research Product Directed to such Research Target or the Exploitation of any of the foregoing that are inconsistent with the rights granted to AbbVie hereunder or (iii) expressly pertains to the Exploitation of such Research Target or any Research Product Directed to such Research Target;

(h) The practice and use of the Morphic Know-How existing as of such Option Bringdown Date and the inventions and discoveries in the Existing Patents and the conduct of Morphic or its Affiliates of its business relating to this Agreement have not and do not and, to Morphic's Knowledge, will not infringe (in each case, without giving effect to 35 U.S.C. § 271(e)(1) and any other laws of similar effect in any jurisdiction) any Patents or misappropriate or use without authorization any Information of any Third Party. (i) No claim or litigation has been brought or asserted (and Morphic has no Knowledge of any claim, whether or

not brought or asserted) by any Person alleging that (x) any of the Existing Patents are invalid or unenforceable or (y) the conception, development, reduction to practice, disclosing, copying, making, assigning or licensing of the Morphic Regulatory Documentation with respect to such Research Target or any Research Product Directed to such Research Target, the Existing Patents, the Morphic Know-How, such Research Target or any Research Product Directed to such Research Target or the Exploitation of any of the foregoing as contemplated herein, violates, infringes, constitutes misappropriation or otherwise conflicts or interferes with or would violate, infringe, misappropriate or otherwise conflict or interfere with, any intellectual property or proprietary right of any Person and (ii) to Morphic's Knowledge, no facts or circumstances exist that would be reasonably expected to give rise to any such claims;

(i) There are no amounts that shall be required to be paid by AbbVie or its Affiliates or its or their Sublicensees to a Third Party as a result of the clinical Development, Manufacture or Commercialization of such Research Target or any Research Product Directed to such Research Target that arises out of any agreement to which Morphic or any of its Affiliates is a party (including the Other Morphic Agreements), except, pursuant to the exception in Section 7.15(b), to the extent reasonably allocable to AbbVie's or its Affiliates' Exploitation of a Licensed Product Directed to such Research Target in accordance with the terms to which AbbVie consented in accordance with Section 2.4.6(b);

(j) A complete and accurate list of all Other Morphic Agreements are listed on the Other Morphic Agreements Schedule. None of the rights, options and licenses granted to Morphic or its Affiliates pursuant to the Other Morphic Agreements are or will be necessary or useful for, and none of AbbVie or its Affiliates or its or their Sublicensees shall have any obligation to any party to an Other Morphic Agreement with respect to, the Exploitation of a Licensed Compound (excluding clause (b) of the definition thereof) Directed to such Research Target or a Licensed Product containing any such Licensed Compound Directed to such Research Target by or on behalf of AbbVie or its Affiliates or its or their Sublicensees;

(k) To Morphic's Knowledge, no Person is infringing or threatening to infringe or misappropriating or using without authorization or threatening to misappropriate or use without authorization the Existing Patents, the Morphic Know-How or the Morphic Regulatory Documentation with respect to such Research Target or any Research Product Directed to such Research Target;

(l) Each of the Existing Patents properly identifies each and every inventor of the claims thereof as determined in accordance with the laws of the jurisdiction in which such Existing Patent is issued or such application is pending;

(m) There are no pending or, to Morphic's Knowledge, alleged or threatened, (i) inter partes reviews, post-grant reviews, interferences, re-examinations or oppositions involving the Existing Patents that are in or before any patent authority (or other Governmental Authority performing similar functions) or (ii) any inventorship challenges involving the Existing Patents that are in or before any patent or other governmental authority;

(n) The inventions or discoveries claimed by the Existing Patents (i) were not conceived, created, discovered, developed or otherwise made in connection

with any research activities funded, in whole or in part, by the federal government of the United States or any agency thereof, (ii) are not a "subject invention" as that term is described in 35 U.S.C. § 201(e), (iii) are not otherwise subject to the provisions of the Patent and Trademark Law Amendments Act of 1980, as amended, codified at 35 U.S.C. §§ 200-212, as amended, as well as any regulations and executive orders promulgated pursuant thereto, including in 37 C.F.R. part 401 (including all additions, supplements, extensions and modifications thereto) and (iv) are not the subject of any licenses, options or other rights of any other Governmental Authority, within or outside the United States, due to such Governmental Authority's funding of research and development or otherwise (other than the right to receive payments or any law of general application that applies to personal property generally, *e.g.*, takings laws). Morphic and its Affiliates have complied in all material respects with any and all obligations applicable to it as a result of the use of funding, facilities, personnel or other resources of any college, university or other educational or research institution or agency, or other organization;

(o) To the Knowledge of Morphic, no breach of any confidentiality, non-disclosure or similar agreement with any Third Party regarding Morphic Know-How has been committed by any Third Party;

(p) Morphic and its Affiliates have generated, prepared, maintained and retained all Morphic Regulatory Documentation with respect to such Research Target and any Research Product Directed to such Research Target that is required to be generated, prepared, maintained or retained pursuant to and in accordance with good laboratory and clinical practice and Applicable Law and all such information is true, complete and correct and what it purports to be in all material respects;

(q) Morphic and its Affiliates have conducted, and, to the Knowledge of Morphic, its and their respective contractors and consultants have conducted, all Development of the Research Products Directed to such Research Target in accordance with good laboratory and clinical practice and Applicable Law, in all cases in all material respects;

(r) Neither Morphic nor any of its Affiliates, nor any of its or their respective officers, employees or agents has (i) committed an act, (ii) made a statement or (iii) failed to act or make a statement that, in any case ((i), (ii) or (iii)), that (x) would be or create an untrue statement of material fact or fraudulent statement to the FDA or any other Regulatory Authority with respect to the Exploitation of any Research Product Directed to such Research Target or (y) could reasonably be expected to provide a basis for the FDA to invoke its policy respecting "Fraud, Untrue Statements of Material Facts, Bribery and Illegal Gratuities", set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto or any analogous laws or policies in the Territory;

(s) Neither Morphic nor any of its Affiliates has been debarred or is subject to debarment; and

(t) Each report provided by Morphic to AbbVie hereunder with respect to such Research Target or otherwise with respect to any Research Product Directed to such Research Target, including pursuant to Section 2.5, and the Data Package with respect to

such Research Target provided by Morphic to AbbVie pursuant to Section 2.6 is true, complete and, to Morphic's Knowledge, correct in all material respects.

Schedule 10.2.3
Representations and Warranties as of the ROFN Bringdown Date

Morphic additionally represents and warrants to AbbVie, as of the ROFN Bringdown Date with respect to a ROFN Target, that except as set forth in the Updated ROFN Disclosure Schedules provided as of such ROFN Bringdown Date:

(a) Neither Morphic nor any of its Affiliates has used any Information, inventions, materials or intellectual property in the performance of the ROFN Activities with respect to such ROFN Target or otherwise with respect to any small molecule antagonist Directed to such ROFN Target that was identified, generated, optimized or otherwise Developed by or on behalf of Morphic or its Affiliates that is encumbered by any contractual right of or obligation to a Third Party that conflicts, diminishes or interferes with any of the rights, options or licenses granted or to be granted to AbbVie pursuant to this Agreement and the ROFN Terms with respect to any Licensed Compound or Licensed Product Directed to such ROFN Target;

(b) All Existing Patents are listed on the Existing Patents Schedule, and all Existing Patents (i) (x) are subsisting and (y) that have issued are, to Morphic's Knowledge, valid and enforceable, (ii) are solely and exclusively owned or in-licensed pursuant to an In-License Agreement by Morphic or one of its Affiliates, free of any encumbrance, lien or claim of ownership by any Third Party, and (iii) have been filed and maintained properly and correctly and all applicable fees have been paid on or before the due date for payment. The pending applications included in Existing Patents are being diligently prosecuted in the respective patent offices in the Territory in accordance with Applicable Law and Morphic and its Affiliates have presented all references, documents and information material to patentability of which it and the inventors are aware to the relevant patent examiner at the relevant patent office and have otherwise complied with the duty of candor and good faith required under 37 C.F.R. §1.56 and analogous laws outside the United States with respect to all Existing Patents;

(c) True, complete and correct copies of (i) the file wrappers relating to the prosecution, defense, maintenance, validity and enforceability of the Existing Patents and (ii) all In-License Agreements, as amended, supplemented or modified, in each case ((i) and (ii)), have been provided by Morphic to AbbVie;

(d) A complete and accurate list of all In-License Agreements are listed on the In-License Schedule, and (i) all agreements pursuant to which Morphic or any of its Affiliates acquires, licenses or otherwise obtains from a Third Party any intellectual property rights licensed by Morphic to AbbVie hereunder, including the Morphic Patents and the Morphic Know-How, are in writing, (ii) the licenses to Morphic and its Affiliates in the In-License Agreements are in full force and effect and by their terms are (sub)licensable to AbbVie as contemplated by this Agreement, (iii) neither Morphic nor any of its Affiliates is in breach under any of the In-License Agreements, nor, to Morphic's Knowledge, is any counterparty thereto, (iv) neither Morphic nor any of its Affiliates has received any written notice of breach or default under any of the In-License Agreements from the counterparty thereto, and (v) to Morphic's Knowledge, no facts or circumstances exist that would reasonably be expected to give rise to any

such breach or default. The clinical Development, Manufacture or Commercialization of any small molecule antagonist Directed to such ROFN Target by or on behalf of AbbVie pursuant to the ROFN Terms will not be subject to any license or other agreement (other than the In-License Agreements listed on the In-License Schedule) to which Morphic or any of its Affiliates is a party;

(e) The Existing Patents (and solely with respect to the conduct of Development by or on behalf of Morphic or its Affiliates with respect to such ROFN Target (and not the Exploitation by or on behalf of AbbVie or its Affiliates of any small molecule antagonist Directed to such ROFN Target pursuant to the ROFN Terms), Patents licensed to Morphic or its Affiliates pursuant to the CMCC Agreement) represent all Patents that Morphic or its Affiliates own, in-license or otherwise have rights to relating to such ROFN Target and any small molecule antagonist Directed to such ROFN Target or the Exploitation of either of the foregoing. To Morphic's Knowledge, there is no Information owned by or otherwise in the possession or control of Morphic or any of its Affiliates that relates to and was used by or on behalf of Morphic or its Affiliates to Develop such ROFN Target and any small molecule antagonist Directed to such ROFN Target or the Exploitation of either of the foregoing that is not within the Morphic Know-How. All intellectual property rights relating to such ROFN Target and any small molecule antagonist Directed to such ROFN Target or the Exploitation of either of the foregoing, licensed to Morphic or its Affiliates pursuant to the In-License Agreements are Controlled by Morphic and the rights and obligations of the Parties hereunder are fully consistent with and are not limited in any material respect by the In-License Agreements, including such that the rights granted to AbbVie hereunder to intellectual property licensed pursuant to an In-License Agreement are no more restricted than the analogous rights granted to AbbVie hereunder with respect to intellectual property rights wholly owned by Morphic or its Affiliates;

(f) Neither Morphic nor any of its Affiliates has previously entered into any agreement, whether written or oral, with respect to any Patent or other intellectual property or proprietary right or Information that is necessary or useful, in the case of Morphic, to conduct the ROFN Activities or, in the case of AbbVie, to Exploit any small molecule antagonist Directed to such ROFN Target, that would be Controlled by Morphic or its Affiliates but for such agreement;

(g) Neither Morphic nor any of its Affiliates has entered into any written agreement that (i) grants any Third Party any rights of reference under or access to the Morphic Regulatory Documentation with respect to such ROFN Target and any small molecule antagonist Directed to such ROFN Target that are inconsistent with the rights granted to AbbVie hereunder, (ii) grants any Third Party any rights to or under the Existing Patents, the Morphic Know-How, ROFN Target and any small molecule antagonist Directed to such ROFN Target or the Exploitation of any of the foregoing that are inconsistent with the rights granted to AbbVie hereunder or (iii) expressly pertains to the Exploitation of such ROFN Target and any small molecule antagonist Directed to such ROFN Target;

(h) The practice and use of the Morphic Know-How existing as of such ROFN Bringdown Date and the inventions and discoveries in the Existing Patents and the conduct of Morphic or its Affiliates of its business relating to this Agreement have not and do not and, to Morphic's Knowledge, will not infringe (in each case, without giving effect to 35

U.S.C. § 271(e)(1) and any other laws of similar effect in any jurisdiction) any Patents or misappropriate or use without authorization any Information of any Third Party. (i) No claim or litigation has been brought or asserted (and Morphic has no Knowledge of any claim, whether or not brought or asserted) by any Person alleging that (x) any of the Existing Patents are invalid or unenforceable or (y) the conception, development, reduction to practice, disclosing, copying, making, assigning or licensing of the Morphic Regulatory Documentation with respect to such ROFN Target and any small molecule antagonist Directed to such ROFN Target, the Existing Patents, the Morphic Know-How, ROFN Target and any small molecule antagonist Directed to such ROFN Target or the Exploitation of any of the foregoing as contemplated herein, violates, infringes, constitutes misappropriation or otherwise conflicts or interferes with or would violate, infringe, misappropriate or otherwise conflict or interfere with, any intellectual property or proprietary right of any Person and (ii) to Morphic's Knowledge, no facts or circumstances exist that would be reasonably expected to give rise to any such claims;

(i) There are no amounts that shall be required to be paid by AbbVie or its Affiliates or its or their Sublicensees to a Third Party as a result of the clinical Development, Manufacture or Commercialization of such ROFN Target and any small molecule antagonist Directed to such ROFN Target that arises out of any agreement to which Morphic or any of its Affiliates is a party (including the Other Morphic Agreements);

(j) A complete and accurate list of all Other Morphic Agreements are listed on the Other Morphic Agreements Schedule. None of the rights, options and licenses granted to Morphic or its Affiliates pursuant to the Other Morphic Agreements are or will be necessary or useful for, and none of AbbVie or its Affiliates or its or their Sublicensees shall have any obligation to any party to an Other Morphic Agreement with respect to, the Exploitation of a small molecule antagonist Directed to such ROFN Target or a Licensed Product containing any such small molecule antagonist by or on behalf of AbbVie or its Affiliates or its or their Sublicensees;

(k) To Morphic's Knowledge, no Person is infringing or threatening to infringe or misappropriating or using without authorization or threatening to misappropriate or use without authorization the Existing Patents, the Morphic Know-How or the Morphic Regulatory Documentation with respect to such ROFN Target and any small molecule antagonist Directed to such ROFN Target;

(l) Each of the Existing Patents properly identifies each and every inventor of the claims thereof as determined in accordance with the laws of the jurisdiction in which such Existing Patent is issued or such application is pending;

(m) There are no pending or, to Morphic's Knowledge, alleged or threatened, (i) inter partes reviews, post-grant reviews, interferences, re-examinations or oppositions involving the Existing Patents that are in or before any patent authority (or other Governmental Authority performing similar functions) or (ii) any inventorship challenges involving the Existing Patents that are in or before any patent or other governmental authority;

(n) The inventions or discoveries claimed by the Existing Patents (i) were not conceived, created, discovered, developed or otherwise made in connection

with any research activities funded, in whole or in part, by the federal government of the United States or any agency thereof, (ii) are not a "subject invention" as that term is described in 35 U.S.C. § 201(e), (iii) are not otherwise subject to the provisions of the Patent and Trademark Law Amendments Act of 1980, as amended, codified at 35 U.S.C. §§ 200-212, as amended, as well as any regulations and executive orders promulgated pursuant thereto, including in 37 C.F.R. part 401 (including all additions, supplements, extensions and modifications thereto) and (iv) are not the subject of any licenses, options or other rights of any other Governmental Authority, within or outside the United States, due to such Governmental Authority's funding of research and development or otherwise (other than the right to receive payments or any law of general application that applies to personal property generally, *e.g.*, takings laws). Morphic and its Affiliates have complied in all material respects with any and all obligations applicable to it as a result of the use of funding, facilities, personnel or other resources of any college, university or other educational or research institution or agency, or other organization;

(o) To the Knowledge of Morphic, no breach of any confidentiality, non-disclosure or similar agreement with any Third Party regarding Morphic Know-How has been committed by any Third Party;

(p) Morphic and its Affiliates have generated, prepared, maintained and retained all Morphic Regulatory Documentation with respect to such ROFN Target and any small molecule antagonist Directed to such ROFN Target that is required to be generated, prepared, maintained or retained pursuant to and in accordance with good laboratory and clinical practice and Applicable Law and all such information is true, complete and correct and what it purports to be in all material respects;

(q) Morphic and its Affiliates have conducted, and, to the Knowledge of Morphic, its and their respective contractors and consultants have conducted, all Development of the small molecule antagonists Directed to such ROFN Target in accordance with good laboratory and clinical practice and Applicable Law, in all cases in all material respects;

(r) Neither Morphic nor any of its Affiliates, nor any of its or their respective officers, employees or agents has (i) committed an act, (ii) made a statement or (iii) failed to act or make a statement that, in any case ((i), (ii) or (iii)), that (x) would be or create an untrue statement of material fact or fraudulent statement to the FDA or any other Regulatory Authority with respect to the Exploitation of any small molecule antagonist Directed to such ROFN Target or (y) could reasonably be expected to provide a basis for the FDA to invoke its policy respecting "Fraud, Untrue Statements of Material Facts, Bribery and Illegal Gratuities", set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto or any analogous laws or policies in the Territory;

(s) Neither Morphic nor any of its Affiliates has been debarred or is subject to debarment; and

(t) Each report provided by Morphic to AbbVie hereunder with respect to such ROFN Target or otherwise with respect to any small molecule antagonist Directed to such ROFN Target, including pursuant to Section 2.5, and [***] with respect to such

ROFN Target provided by Morphic to AbbVie pursuant to Section 3.2.2 or Section 3.2.3 is true, complete and, to Morphic's Knowledge, correct in all material respects.

Schedule 13.5.3
ADR Procedures

Any Dispute referred to ADR under this Agreement shall be resolved as follows:

[***]

Exhibit 10.12

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

CONFIDENTIAL

Collaboration Agreement

This COLLABORATION AGREEMENT ("**Agreement**"), dated as of June 10, 2015, is made by and between Morphic Rock Therapeutic, Inc. ("**Client**"), a Delaware corporation with offices at 1000 Winter Street, Suite 3350, Waltham, MA 02451 and SCHRÖDINGER, LLC ("**Schrödinger**"), a Delaware limited liability company, with offices at 120 West 45th Street, 17th Floor, New York, New York 10036.

WHEREAS, Schrödinger has developed proprietary software programs that are used in preclinical drug discovery projects including target validation, hit identification, hit-to-lead, and lead optimization;

WHEREAS, Schrödinger, through its Drug Discovery Group, enters into scientific collaborations with research teams in biotechnology and pharmaceutical companies and academic labs, pursuant to which the Drug Discovery Group applies the Schrödinger Technology (defined below) and its expertise in drug design to specific targets;

WHEREAS, Client is engaged in research into agents that target members of the integrin family of cell adhesion molecules for the purpose of the discovery, design, development and commercialization of such agents; and

WHEREAS, the parties wish to enter into this Agreement to set forth the terms on which Schrödinger will perform drug design services for the Target(s) defined in Section 1 below;

NOW, THEREFORE, in consideration of the mutual promises set forth herein, the sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Definitions.

a. "**Client Improvements**" shall mean any improvement, modification, or enhancement of the Client Confidential Information (as defined in Section 5 below), Client Intellectual Property or Work Product made by either party during the Collaboration, collectively with the Intellectual Property embodied therein.

b. **"Client Intellectual Property"** shall mean (i) Intellectual Property (as defined in Section 1.d.) owned or licensed by Client prior to or independent of this

Agreement; (ii) the Intellectual Property embodied in the Client Confidential Information (as defined in Section 5.b.); and (iii) the Intellectual Property embodied in the Work Product (as defined in Section 1.j.). The Client Intellectual Property excludes Schrödinger Intellectual Property (as defined in Section 1.e.).

c. **"Collaboration"** shall mean the responsibilities specified for each party in **Exhibit A**.

d. "**Computer-Generated Model**" shall mean the ligand- or structure-based models of the compounds or Targets that are prepared and used by Schrödinger in the evaluation and design of compounds under this Collaboration.

e. "**Effective Date**" shall mean April 21, 2015.

f. "**Intellectual Property**" shall mean all rights in any property now known or hereafter recognized anywhere in the world, including the following: (i) patents, inventions (whether or not patentable), and all applications or registrations in any jurisdiction pertaining to the foregoing, including all provisional applications, reissues, continuations, divisions, continuations-in-part, utility models, renewals or extensions thereof; (ii) trade secrets, including confidential and other non-public information with respect to business or scientific activities, and the right in any jurisdiction to limit the use or disclosure thereof; (iii) copyrights or similar rights in writings, designs, mask works, or other works of authorship, and registrations or applications for registrations of copyrights in any jurisdiction; (iv) trademarks and service marks (registered or unregistered), trade dress, trade names, and other names and slogans embodying business or product goodwill or indications of origin, and all applications or registrations in any jurisdiction pertaining to the foregoing; and all goodwill associated therewith; and (v) Internet Web sites, domain names and registrations or applications for registration thereof. Examples of property that typically embody Intellectual Property include without limitation software programs (in source and object code forms), algorithms, methods, computer-generated models based on the analysis of structure-activity relationships, and proprietary databases.

g. "**Schrödinger Improvements**" shall mean any improvement, modification, or enhancement of the Schrödinger Confidential Information (as defined in Section 5 below), Schrödinger Technology, Schrödinger Knowhow, Schrödinger Library or Schrödinger Intellectual Property made by either party, collectively with the Intellectual Property embodied therein; *provided*, *however*, that no Client Intellectual Property, Client Improvements or Work Product will be added to the Schrödinger Library or otherwise considered Schrödinger Improvements.

h. "**Schrödinger Intellectual Property**" shall mean the Intellectual Property embodied in the Schrödinger Technology, Schrödinger Knowhow, and Schrödinger Library.

i. **"Schrödinger Knowhow"** shall mean the proprietary techniques, methods, workflows and knowhow of Schrödinger and its licensors, and employed by Schrödinger to perform its services under the Collaboration. "Schrödinger Knowhow" excludes the Work Product, which the parties acknowledge is a tangible output of Schrödinger's application of the Schrödinger Knowhow to this Collaboration.

j. **"Schrödinger Library"** shall mean the compilation prepared by Schrödinger of lead- and drug-like compounds that are offered commercially by third party suppliers.

k. "**Schrödinger Technology**" shall mean the proprietary software, programs, tools and technology owned or controlled by Schrödinger.

l. **"Target(s)**" shall mean a member of the target class of human integrins.

m. **"Work Product"** shall mean the work product delivered by Schrödinger to Client in connection with its performance of services under the Collaboration, including the Computer-Generated Models. The "Work Product" excludes the Schrödinger Technology, Schrödinger Knowhow, Schrödinger Library, Schrödinger Improvements, Schrödinger Confidential Information and the Schrödinger Intellectual Property.

2. Obligations of Each Party.

a. General Obligations. Each party shall use reasonable efforts, exercised in good faith, to perform its responsibilities under this Agreement, in accordance with the customary standards of professional conduct in such party's field, and in compliance in all material respects with the requirements of applicable laws and regulations. Client acknowledges and agrees that Schrödinger's ability to perform its obligations depends upon Client's fulfillment of its obligations as set forth in this Agreement, including reasonably cooperating with Schrödinger and providing Schrödinger with accurate information and data in a reasonable and timely manner during the Collaboration. Schrödinger will not be responsible for any deficiency or delay in performing its obligations as set forth in this Agreement to the extent such deficiency or delay results from Client's failure to fulfill its obligations as set forth in this Agreement. Each party shall communicate with the other party regularly and in a timely fashion, and shall meet on a regular basis at such times and locations as may be mutually agreed (whether in person or by telephone) to provide

progress reports and to solicit input. Each party shall provide reasonable assistance to the other party in connection with the other party's performance of its obligations hereunder. Notwithstanding the foregoing, the parties acknowledge the experimental nature of the Collaboration, and neither party shall have any liability to the other with respect to such party's failure to produce a specific substantive result.

b. Other Research Projects. The parties acknowledge and agree that Schrödinger may use the Schrödinger Technology, Schrödinger Knowhow, Schrödinger Library, Schrödinger Improvements, Schrödinger Confidential Information and Schrödinger Intellectual Property for other research projects for third parties so long as:

(i) no Client Confidential Information or Client Intellectual Property is used in connection with such research project; and

(ii) during the Term (as defined in Section 9.a.), Schrödinger's Drug Discovery Group does not perform drug discovery services substantially similar to those provided hereunder by the Drug Discovery Group for any research project that involves any Target (the restriction set forth in this clause (ii), the "**Exclusivity Restriction**"). For clarity, the Exclusivity Restriction does not apply where Schrödinger is developing its own technology, performing technical support, applications science services, professional IT services or technology development work, or software sales and other IT services in regard to a third party licensee's use of the Schrödinger Technology (collectively, "**Unrestricted Activities**"), *provided, however*, that in no event shall Schrödinger, in the course of conducting such Unrestricted Activities, knowingly design compounds directed at the Targets.

c. Joint Steering Committee. Within three (3) weeks after the execution of this Agreement, the parties shall form a joint steering committee (the "**JSC**") comprised of four individuals designated as set forth below, which JSC shall be responsible for the general oversight of the research carried out hereunder, including without limitation: (i) reviewing the goals, strategy, Milestone Events (as defined in Exhibit B), and results of the Work Plan (set forth in Exhibit A) and the activities performed thereunder; (ii) recommending and approving changes to the Work Plan; (iii) assigning relative priorities in the Work Plan; (iv) terminating any specific activities under the Work Plan; (v) determining whether a Milestone Event has occurred; and (vi) resolving any disagreements between the parties concerning the research and development activities carried out under this Agreement. Each party shall designate two (2) individual representatives as members of the JSC, each of whom shall be authorized to make decisions on behalf of the designating party (subject to the terms and conditions of this Section 2.c.) and shall have significant experience and expertise in the research and development of pharmaceutical compounds. Each party shall

have the right, at any time, to designate by written notice to the other Party, a replacement for any of such party's representatives on the JSC. The JSC shall endeavor to work by consensus. Decisions of the JSC shall be made by unanimous written consent and shall be included in amendments to the Work Plan, if applicable. Where unanimity cannot be achieved in respect of any matter following good faith, commercially reasonable efforts on the part of the members of the JSC, such disputed matter shall be referred to the relevant senior management of the parties who shall promptly meet and endeavor to come to an agreement in a timely manner. The JSC will determine, subject to the terms and conditions of this Section 2.c., whether any Milestone Event has occurred. The JSC will notify the relevant senior management of each party in writing that any such Milestone Event has occurred no later than [***] after such a determination.

d. Project Scope. Unless otherwise agreed by the JSC pursuant to and in accordance with the terms and conditions of Section 2.c., the parties agree that Schrödinger shall, during the Term, perform virtual screens on up to [***] Targets per year of the Term. For clarity, the parties agree that Schrödinger will perform more than [***] on a single Target, as reasonably required. The parties agree further that Schrödinger shall not be obligated to perform Hit to Lead activities (as set forth in the Work Plan) or Lead Optimization activities (as set forth in the Work Plan) on more than [***] Targets simultaneously.

3. Payment and Expenses. Client shall remunerate Schrödinger as set forth in **Exhibit B.** All payments shall be made by check, electronic funds transfer or wire transfer payable to Schrödinger at the address designated in **Exhibit B**, or such other address provided to Client by Schrödinger. Client shall be responsible for paying any sales or other related taxes, if any, that are applicable to the cash payments hereunder for the services received from Schrödinger, but shall not be responsible for taxes on Schrödinger's income. Schrödinger shall be responsible for all taxes on its income, including in respect of any equity interest in Client received by Schrödinger in connection with this Agreement. All payments hereunder shall be made without deduction for withholding taxes unless otherwise required by law. At no time may Client withhold payment of fees that are not subject to a good faith dispute.

4. Proprietary Rights.

a. Ownership. As between Client and Schrödinger, Client shall own all right, title, and interest in the Client Confidential Information, Work Product, Client Intellectual Property, and any Client Improvements. As between Schrödinger and Client, Schrödinger shall own all right, title, and interest in the Schrödinger Confidential Information, Schrödinger Technology, Schrödinger Knowhow, Schrödinger Library, Schrödinger

Intellectual Property, and any Schrödinger Improvements. Client will assign and does hereby assign all right title and interest in and to all Schrödinger Improvements, and will promptly disclose to Schrödinger all Schrödinger Improvements. Client hereby assigns and, to the extent any such assignment cannot be made at the present time, agrees to assign to Schrödinger, without any additional consideration from Schrödinger, any and all copyrights, patents and other proprietary rights Client may have in any such Schrödinger Improvements, together with the right to file and/or own wholly without restrictions applications for United States and foreign patents, trademark registration and copyright registration and any patent, or trademark or copyright registration issuing thereon. Client agrees to waive, and hereby does waive, all moral rights or proprietary rights in or to any Schrödinger Improvements and, to the extent that such rights may not be waived, agrees not to assert such rights against Schrödinger or its licensees, successors or assigns. Schrödinger will assign and does hereby assign all right title and interest in and to all Work Product and Client Improvements, and will promptly disclose to Client all Work Product and Client Improvements. For purposes of the copyright laws of the United States, Work Product and Client Improvements constitute "works made for hire" under the copyright laws of the United States and Schrödinger hereby assigns and, to the extent any such assignment cannot be made at the present time, agrees to assign to Client, without any additional consideration from Client, any and all copyrights, patents and other proprietary rights Schrödinger may have in any such Work Product and Client Improvements, together with the right to file and/or own wholly without restrictions applications for United States and foreign patents, trademark registration and copyright registration and any patent, or trademark or copyright registration issuing thereon. Schrödinger agrees to waive, and hereby does waive, all moral rights or proprietary rights in or to any Work Product and Client Improvements and, to the extent that such rights may not be waived, agrees not to assert such rights against Client or its licensees, successors or assigns.

b. Protection and Enforcement. Each party will have the responsibility, in its sole discretion and at its sole expense, to protect and enforce its Intellectual Property rights.

c. Cooperation. Each party shall provide such assistance as may reasonably be required for the other party to secure, perfect, maintain and enforce the other party's Intellectual Property rights in connection with this Agreement. Reasonable assistance includes executing and delivering the documents reasonably necessary for the other party to secure, perfect, maintain or enforce its rights in such Intellectual Property (including documents to assign rights, to apply for patent protection, or to register a copyright), and responding to reasonable requests for information pertinent thereto; provided, however, that in each case, the party requesting the assistance shall be required to reimburse the assisting party's reasonable out-of-pocket expenses incurred in connection therewith. In addition, each party hereby appoints the other party, in the event that such other party is

unable after reasonable inquiry to obtain such party's (or its employee's or agent's) signature on such a document, as its attorney-in-fact to sign such documents as such other party deems necessary to secure, perfect, maintain or enforce such other party's rights as contemplated by this Section 4.

d. License Grant by Schrödinger. Subject to the terms and conditions of this Agreement, Schrödinger will grant and does grant to Client a limited, non-exclusive, internal-use-only, non-transferable, non-assignable, non-sublicensable license to use and disclose to its employees with a need to know for purposes of performing this Agreement, the Schrödinger Technology known as LiveDesign and/or Seurat during the Term as reasonably useful for facilitating the objectives of the Work Plan, including a number of seats for Client users who are contributing to the Collaboration, which number of seats shall initially be [***], and which number shall be increased or decreased without the payment of additional consideration hereunder upon written notification by Client to Schrödinger of any changes to the number of Client users who are contributing to the Collaboration. In addition, Client's use of LiveDesign and Seurat are subject to the terms and conditions set forth in Schrödinger's End User Agreement for Hosted Software ("**EUA**") attached as **Exhibit C** hereto. In the event of any inconsistency between the terms of the EUA and this Agreement, the terms of this Agreement shall control.

e. No Implied Licenses. All rights in and to Intellectual Property not expressly granted by Client or Schrödinger under this Agreement are reserved to its owner. Nothing in this Agreement will be deemed to weaken or waive any rights of either party related to the protection of trade secrets.

5. Confidentiality.

a. Client hereby acknowledges that the Schrödinger Technology, Schrödinger Knowhow, Schrödinger Library, Schrödinger Improvements and Schrödinger Intellectual Property (collectively, "**Schrödinger Confidential Information**") are proprietary and confidential to Schrödinger. Client agrees not to disclose the Schrödinger Confidential Information (or any portion thereof) to any third party, except as permitted by this Agreement. Client agrees (i) to protect the Schrödinger Confidential Information in the same manner that it protects its own confidential information (but no less than reasonable care); (ii) to permit access to the Schrödinger Confidential Information only to employees, officers, directors, agents, contractors, consultants and advisors (each, a "**Representative**") of Client and its affiliates who reasonably have a need to know for the purposes authorized under this Agreement (including purposes reasonably related to its performance or enforcement) and who are bound by obligations of confidentiality substantially similar to those set forth herein, and will inform such Representatives who will have access to

Schrödinger Confidential Information of the obligations of confidentiality under this Agreement; and (iii) not to copy or use the Schrödinger Confidential Information other than as permitted by this Agreement for the purposes authorized hereunder, or as required by applicable law or regulation.

b. Schrödinger hereby acknowledges that the Client Improvements, Work Product and the Client Intellectual Property (collectively, "**Client Confidential Information**") are proprietary and confidential to Client. Schrödinger agrees not to disclose the Client Confidential Information (or any portion thereof) to any third party, except as permitted by this Agreement. Schrödinger agrees (i) to protect the Client Confidential Information in the same manner that it protects its own confidential information (but no less than reasonable care); (ii) to permit access to the Client Confidential Information only to the Representatives of Schrödinger and its affiliates who reasonably have a need to know for the purposes authorized under this Agreement (including purposes reasonably related to its performance or enforcement) and who are bound by obligations of confidentiality substantially similar to those set forth herein, and will inform such Representatives who will have access to Client Confidential Information of the obligations of confidentiality under this Agreement; and (iii) not to copy or use the Client Confidential Information other than as permitted by this Agreement for the purposes authorized hereunder, or as required by applicable law or regulation.

c. The receiving party's obligations of confidentiality are not applicable to any materials of the disclosing party if and to the extent that such materials: (i) were known to the receiving party prior to disclosure hereunder, as evidenced by written documentation or other reasonable evidentiary means; (ii) are in the public domain at the time of disclosure or later enter the public domain through no fault of the receiving party; (iii) were disclosed to the receiving party by a third party not known by the receiving party to be bound by any obligation of confidentiality or prohibition of disclosure; (iv) were independently developed by the receiving party as evidenced by written documentation or other reasonable evidentiary means, or (v) are required to be disclosed by applicable law, regulation, or court order as evidenced by written documentation or other reasonable evidentiary means.

d. It is understood that the parties may have performed, and may continue to perform, independent development relating to the confidential or proprietary information received hereunder. The parties hereto agree that, except as set forth in Section 2.b., neither this Agreement nor the receipt of any confidential or proprietary information shall limit either party's independent development; provided, however, that in connection with such independent development, (i) Schrödinger shall not use Client Confidential Information, and (ii) Client shall not use Schrödinger Confidential Information.

6. Representations and Warranties.

Each party represents and warrants that (i) it has all rights to enter into this Agreement; (ii) it is and will remain a corporation or company duly organized, validly existing and in good standing under the laws of its jurisdiction of organization and (iii) it shall comply with all applicable laws with respect to its rights and obligations under this Agreement. EXCEPT AS EXPRESSLY SET FORTH HEREIN, NEITHER PARTY MAKES ANY OTHER WARRANTIES, EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, ACCURACY, TITLE, AND NON-INFRINGEMENT).

7. Publicity.

a. Client and Schrödinger may each publish, disseminate or otherwise disclose any information received or generated under this Agreement (subject to the limitations on use of Schrödinger Confidential Information or Client Confidential Information, as applicable and Schrödinger Intellectual Property and Client Intellectual Property, as applicable); provided, however, all such publications and presentations shall (i) bear appropriate acknowledgment of each party's contributions and (ii) be subject to the prior written approval of each party, which consent shall, in each case, not be unreasonably withheld or delayed.

b. Except as provided in Section 7(a) above and in this Section 7(b), neither party will use the name of the other party in any material intended for public disclosure without such other party's prior express written consent. Notwithstanding the foregoing, either party may disclose the fact that it is, or has been, in a scientific collaboration with the other party (i) on its external website, (ii) in written or verbal communications with such party's Representatives, investors, potential investors, customers, and potential customers, and (iii) in a press release agreed upon by the parties and which shall be distributed when and as agreed by the parties, in each case without disclosing any Client Confidential Information or Schrödinger Confidential Information, as the case may be.

8. LIMITATION OF LIABILITY.

TO THE MAXIMUM EXTENT PERMITTED BY LAW, NEITHER PARTY SHALL BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, PUNITIVE, OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT (INCLUDING WITHOUT LIMITATION DAMAGES FOR LOST

BUSINESS OR PROFITS, LOSS OF DATA OR COSTS OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES), EVEN IF ADVISED OF THE POSSIBILITY THEREOF. THE ENTIRE AGGREGATE LIABILITY OF EACH OF SCHRÖDINGER OR CLIENT UNDER OR RELATING TO THIS AGREEMENT, FOR ANY REASON(S) AND UPON ANY CAUSE(S) OF ACTION WHATSOEVER, SHALL NOT EXCEED THE GREATER OF (A) THE AMOUNT OF ANY CASH MILESTONE PAYMENTS AS SET FORTH IN EXHIBIT B ACTUALLY RECEIVED BY SCHRÖDINGER FROM CLIENT UNDER THIS AGREEMENT PRIOR TO THE EVENT GIVING RISE TO SUCH LIABILITY OR (B) [***].

9. Term; Termination.

a. The term of this Agreement shall commence on the Effective Date and shall continue for a period of three (3) years immediately thereafter, or until the effective date of any earlier termination in accordance with the terms of this Section 9 (such period, the "**Term**"). The parties may agree to extend the Term from time to time, pursuant to a written amendment to this Agreement.

b. A party may terminate this Agreement (i) by giving notice in writing to the other party in the event the other party materially breaches this Agreement and shall have failed to cure such breach within [***] of receipt of written notice thereof from the first party, or (ii) at any time by giving notice in writing to the other party, which notice shall be effective upon dispatch, should the other party file a petition of any type as to its bankruptcy, be declared bankrupt, become insolvent, make an assignment for the benefit of creditors, go into liquidation or receivership. Any termination of this Agreement by Client pursuant to the foregoing clauses (i) or (ii) shall be referred to as a "**Client Termination for Cause**".

c. Client shall remain liable for payment to Schrödinger of all payment obligations under Section 3, including **Exhibit B**, subject to and in accordance with the terms and conditions thereof.

d. The rights and obligations of the parties under the following sections shall survive the expiration or earlier termination of this Agreement: Sections 3 (including any outstanding payment obligation under **Exhibit B**), 4, 5, 7, 8, 9, 10 and 11.

10. Notices.

a. Any notice under this Agreement shall be in writing and shall be deemed properly delivered, given and received when delivered (by hand, by registered mail, or by

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

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courier or express delivery service during business hours) to the address set forth beneath the name of such party below, unless such party has given a notice of a change of address in writing:

If to Schrödinger:

Schrödinger, LLC
120 West 45th Street, 17th Floor
New York, NY 10036
USA
Attention: President

with a copy to "Attention: General Counsel" at the same address;

If to Client:

Morphic Rock Therapeutic, Inc.
1000 Winter Street, Suite 3350
Waltham, MA 02451
Attention: Kevin Bitterman

with a copy (which shall not constitute notice) to:

Foley Hoag LLP
155 Seaport Boulevard
Boston, MA 02210
Attention: Mark A. Haddad, Esq.

11. Miscellaneous.

a. Each party acknowledges and agrees that such party's services hereunder are performed on a non-exclusive basis, except as set forth in Section 2(b). Each party shall have the right to perform similar services for, or undertake similar collaborations with, parties other than the other party.

b. This Agreement does not provide, and shall not be construed to provide, any third parties with any remedy, claim, cause of action or privilege. Nothing in this Agreement shall be construed as creating an employer-employee or agency relationship, or a partnership or a joint venture between the parties.

c. This Agreement and its enforcement shall be governed by, and construed in accordance with, the laws of The Commonwealth of Massachusetts, without regard to conflicts-of-law principles. The exclusive venue for any action relating to this Agreement shall be the state and federal courts situated in The Commonwealth of Massachusetts, and each party expressly consents to the jurisdiction of such courts.

d. Each party to this Agreement recognizes that money damages alone may not adequately compensate the other party in the event of breach by the such party of Sections 4 and 5 of this Agreement, and each party agrees that, in addition to all other remedies available at law, in equity or otherwise, each party shall be entitled to seek injunctive relief for the enforcement thereof without the requirement of posting any bond in connection therewith. All rights and remedies hereunder are cumulative and are in addition to and not exclusive of any other rights and remedies available at law, in equity, by agreement or otherwise.

e. This Agreement may not be assigned, in whole or in part, by either party without the prior written consent of the other party, except that a party may assign this Agreement without consent in the event of a merger, acquisition, sale of all or substantially all of the assets or corporate reorganization of such party.

f. Neither party shall be deemed in default hereunder, nor shall it hold the other party responsible for, any cessation, interruption or delay in the performance of its obligations hereunder due to earthquake, flood, fire, storm, natural disaster, act of God, war, armed conflict, terrorism, labor strike, lockout, or boycott, provided, however, that the party relying upon this Section 11.e. shall be required (i) to give the other party prompt written notice thereof and, in any event, within [***] following discovery thereof, and (ii) to take all steps reasonably necessary under the circumstances to mitigate the effects of the force majeure event upon which such notice is based.

g. The parties agree that the terms of this Agreement (including all exhibits hereto) are confidential between the parties and shall not be disclosed to third parties. For clarity, the foregoing does not prohibit disclosure of the terms of this Agreement to (i) Representatives and affiliates of each party who reasonably have a need to know for the purposes of this Agreement; or (ii) auditors, investors, potential investors, potential acquirors, attorneys, advisors and similar persons of each party who have a need to know for purposes of corporate and legal compliance, diligence, audits and similar activities; provided however that any such persons are bound by obligations of confidentiality in connection with any disclosure of the terms of this Agreement.

h. This Agreement, including all exhibits hereto, constitutes the entire agreement between the parties concerning the subject matter hereof and supersedes any prior agreements, representations, statements, negotiations, understandings, proposals or undertakings, oral or written, with respect to the subject matter expressly set forth herein. The parties agree that references to the word "including" mean "including, but not limited to", references to the phrase "third party" mean parties other than Client, Schrödinger or their respective affiliates, and references to exhibits mean such exhibits as they may be amended from time to time pursuant to this Agreement. Headings used in this Agreement are for the purpose of reference only and are not to be considered in construction or interpretation of this Agreement. In the event of any conflict between the terms of this Agreement and any exhibit, the terms of this Agreement shall take precedence. No provisions of this Agreement may be modified, waived or discharged unless a written modification, waiver or discharge has been signed by both parties. If any provision of this Agreement shall be held to be illegal, invalid or unenforceable, each party agrees that such provision shall be enforced to the maximum extent permissible so as to effect the intent of the parties, and the validity, legality and enforceability of the remaining provisions of this Agreement shall not in any way be affected or impaired thereby. The failure by any party to exercise any right or remedy provided for herein shall not be deemed a waiver, partial or complete, of any right or remedy hereunder. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall be deemed one and the same instrument.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed as of the date first set forth above.

SCHRÖDINGER, LLC, by its sole member,
SCHRÖDINGER, INC.

By: **/s/ Ramy Farid**
Ramy Farid, Ph.D.
President

MORPHIC ROCK THERAPEUTIC, INC.

By: **/s/ Kevin Bitterman**
Name: Kevin Bitterman
Title: CEO

Exhibit B

Payments and Fees

I. In addition to the fees payable to Schrödinger under this Agreement, Schrödinger's parent company, Schrödinger Inc., (the "**Schrödinger Parent**") will receive, upon the effective date of the Operating Agreement (as defined below), as consideration for Schrödinger's performance of the Services hereunder, 2,962,050 Preferred Units (the "**Preferred Units**") of Morphic Rock Holding, LLC (the "**Client Parent**"), as defined in that certain Amended and Restated Operating Agreement of the Client Parent, dated as of June 10, 2015 (the "**Operating Agreement**"). Upon a Client Termination for Cause on or before [***], in addition to any remedies available under applicable law, the following proportion of the Preferred Units shall be immediately forfeited by the Schrödinger Parent to the Client Parent without further action by or compensation from Client or the Client Parent, and in such case neither Client nor the Client Parent shall have any further obligations with respect to such forfeited Preferred Units:

(a) [***]; and

(b) [***]

II. Milestone Payments

All fees set forth herein are non-refundable, non-proratable, and payable in United States dollars.

The Milestone 1 Payment, Milestone 2 Payment and Milestone 3 Payment set forth below (collectively, the "**Milestone Payments**") shall be payable by Client to Schrödinger upon the achievement of the applicable event for each agreed upon Target (each, a "**Milestone Event**") as described below.

MILESTONE 1

Milestone Event 1:	Milestone 1 Payment
[***]	[***]

MILESTONE 2

Milestone Event 2:	Milestone 2 Payment
[***]	[***]

MILESTONE 3

Milestone Event 3:	Milestone 3 Payment
[***]	[***]

Payment Procedure

1. If paying by check, payments should be mailed to Schrödinger at the following address:

Schrödinger, L.L.C.
101 SW Main Street, Suite 1300
Portland, Oregon 97204
Phone: 503-299-1150
Fax: [***]
E-mail: orders@schrodinger.com

2. If paying by wire transfer, payments should be wired to Schrödinger as follows:

[***]
[***]
Account name: [***]
Account number: [***]
Bank routing number: [***]

3. Client shall be responsible for applicable sales taxes on any cash payments hereunder.

Schrödinger, LLC FEIN (Tax Number): [***]

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

Confidential — Execution Copy

MORPHIC THERAPEUTIC, INC.

March 9, 2018

Schrödinger, LLC
120 West 45th Street, 17th Floor
New York, NY 10036
Attention: President

Re: Amendment to Collaboration Agreement, dated as of June 10, 2015, by and between Morphic Therapeutic, Inc. (f/k/a Morphic Rock Therapeutic, Inc.) and Schrödinger, LLC (the "Agreement")

Ladies and Gentlemen:

As you know, Morphic Therapeutic, Inc. (f/k/a Morphic Rock Therapeutic, Inc.), a Delaware corporation ("Client", "we" or "us"), and Schrödinger, LLC, a Delaware limited liability company ("Schrödinger") are parties to the above-referenced Agreement pursuant to which, among other things, Schrödinger agreed to perform certain drug design services set forth therein.

This letter ("Letter Agreement") confirms our mutual understanding and agreement to amend and extend the Agreement, by incorporating the provisions set forth below, each of which shall be incorporated into the Agreement notwithstanding anything to the contrary set forth therein. All capitalized terms used in this Letter Agreement but not otherwise defined shall have the definitions assigned to them in the Agreement.

1. Extension of Term. The parties hereby confirm that the Term of the Agreement shall be and hereby is extended for an additional period of ten (10) years, commencing on April 21, 2018 ("Renewal Term Commencement Date") and concluding on April 21, 2028, unless sooner terminated as provided in the Agreement, as amended by this Letter Agreement (the "Renewal Term"). All references to the "Term" in the Agreement shall be deemed to include and apply to the Renewal Term.

2. Termination. Section 9 of the Agreement is hereby amended by deleting subsections b. and c. thereof in their entirety and replacing them with the following:

"b. Without prejudicing any other rights or remedies which may be available to a Party under this Agreement, at law or in equity,

(1) A party may terminate this Agreement (i) by giving notice in writing to the other party in the event the other party materially breaches this Agreement and shall have failed to cure such breach within [***] of receipt of written notice thereof from the first party, or (ii) at any time by giving notice in writing to the other party, which notice shall be effective upon dispatch, should the other party file a petition of any type as to its bankruptcy, be declared bankrupt, become insolvent, make an assignment for the benefit of creditors, go into liquidation or receivership. Any termination of this Agreement by Client pursuant to the foregoing clauses (i) or (ii) shall be referred to as a "**Client Termination for Cause**".

(2) Either party may terminate this Agreement, by written notice to the other party in accordance with the penultimate sentence of this subsection (2), following any (a) transaction or series of related transactions in which any individual or entity, or a group of related individuals and/or entities, acquires voting securities of the Client from the holders thereof which securities represent more than fifty percent (50%) of the total outstanding voting power of all outstanding equity securities of the Client; (b) merger (including a reverse triangular merger), reorganization, consolidation, share exchange, or similar transaction involving the Client in which the holders of voting securities of the Client outstanding immediately prior thereto cease to hold voting securities that represent at least fifty percent (50%) of the combined voting power of the surviving entity immediately after such merger, reorganization, consolidation, share exchange, or similar transaction.; or (c) the sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Client or any subsidiary of the Client of all or substantially all the assets of the Client and its subsidiaries (if any) taken as a whole, unless the Client is retaining a substantial portion of the proceeds from such sale to continue its operations. Client shall notify Schrodinger of the occurrence of any transaction described in clauses (a), (b) or (c) above within [***] following the closing of such transaction (such notice, a **"Sale Notice").** A party electing to terminate this Agreement pursuant to this subsection (2) must provide written notice to the other party of its election, if at all, within [***] after the issuance of a Sale Notice. Termination of the Agreement will be deemed to occur immediately upon the date of issuance of any such termination notice by a party.

(3) Schrödinger may terminate this Agreement pursuant to written notice provided to the Client on or after the fifth anniversary of the Renewal Term Commencement Date (as defined in that certain Letter Agreement, dated March 9, 2018, between the parties ("**Letter Agreement**")) if, during the initial five-year period of the Renewal Term (as defined in the Letter Agreement), fewer than two Milestone

3 Payments have become payable to Schrödinger by Client pursuant to Exhibit B of the Agreement.

c. Client (or its successors or permitted assigns, as applicable) shall remain liable and obligated to pay to Schrödinger all past and future payment obligations under Section 3 following any termination or expiration of this Agreement, including all milestone and royalty payments under Exhibit B that have accrued prior to the effective date of any termination or expiration of this Agreement or that accrue after the effective date of any termination or expiration of this Agreement, in each case subject to and in accordance with the terms and conditions hereof."

3. Assignment. Section 11.e of the Agreement is hereby deleted in its entirety and replaced with the following:

"e. This Agreement may not be assigned, in whole or in part, by either party without the prior written consent of the other party, except that a party may assign this Agreement without consent in the event of a merger, acquisition, sale of all or substantially all of the assets or corporate reorganization of such party. Any attempted assignment, transfer or sale in violation of this Section 11.e shall be void and of no effect. All validly assigned rights and obligations of the parties hereunder shall be binding upon and inure to the benefit of and be enforceable by and against the successors and permitted assigns of Client or Schrodinger, as the case may be. The permitted assignee or transferee shall assume all obligations of its assignor or transferor under this Agreement."

4. Royalties. Exhibit B to the Agreement (Payments and Fees) is hereby amended by adding the new Section III attached hereto as Appendix B-III following the existing Section II thereof.

5. Notices. We hereby notify Schrödinger pursuant to Section 10.a. of the Agreement that notices to be delivered to Client pursuant to the Agreement shall be sent to the Client's address as follows:

Morphic Therapeutic, Inc.
35 Gatehouse Drive
Waltham, MA 02451
Attention: CEO

6. Single Agreement. Except as otherwise set forth in this Letter Agreement, all of the terms and conditions of the Agreement shall remain in full force and effect. This Letter Agreement together with the Agreement and all exhibits, schedules and attachments thereto constitute the entire agreement among the parties with respect to the subject matter hereof and thereof and supersede all previous written or oral understandings between the parties.

This Letter Agreement is not valid or binding unless and until it is fully executed by Schrödinger and the Client. Please confirm your acknowledgement and agreement to the foregoing by countersigning where indicated below and return one original countersigned letter to us.

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

Very truly yours,

MORPHIC THERAPEUTIC, INC.

By: /s/ Praveen Tipirneni
Name: Praveen Tipirneni
Title: Chief Executive Officer

Agreed and accepted:

SCHRÖDINGER, LLC, by its sole member,
SCHRÖDINGER, INC.

By: /s/ Ramy Farid
Name: Ramy Farid
Title: President and Chief Executive Officer

Appendix B-III

III. Royalty Payments

A. Certain Definitions.

1. "**Affiliate**" means any company or other legal entity controlling, controlled by or under common control with a party. For purposes of the definition of "**Affiliate**" the term "**control**" shall mean: (i) the ownership of at least a majority of the ordinary voting power necessary to effect the election of a majority of the board directors or other governing board, or in the case of a for-profit entity, direct or indirect ownership of at least a majority of the stock or participating shares entitled to vote for the election of directors of that entity; or (ii) in the case of a partnership, the power customarily held by a managing partner to direct the management and policies of such partnership; or (iii) in the case of a joint venture, whether in corporate, partnership or other legal form, a prevailing joint economic interest coupled with a managerial role entailing active direction, control and accountability with respect to the business and affairs of the entity.

2. "**Derived Compound**" means any chemical compound identified, generated, developed or discovered by Client or its Affiliates or on behalf of Client or any of its Affiliates, including by Schrödinger, during the Term in connection with the Collaboration, as well as all salts, hydrates, solvates, esters, metabolites, intermediates, stereoisomers, polymorphs, and any derivatives or modifications of any of the foregoing which are identified, generated or discovered by or on behalf of Client or its Affiliates at any time during or after the Term.

3. "**Covered Product**" means any product comprising or containing any Derived Compound, alone or in combination with one or more other active ingredients in any and all forms, in current and future formulations, indications, dosage forms, strengths and delivery modes, including any improvements thereto.

4. "**Net Sales**" means, as determined under U.S. generally accepted accounting principles, the gross amounts billed or invoiced for sales, leases or other transfers of Covered Products by or on behalf of Client or its Affiliates or any of their respective Third Party licensees or sublicensees (each, an "**Invoicing Entity**"), less (to the extent actually allowed or incurred and directly related to such sale of Covered Products and not previously deducted from the gross invoice price) the following amounts:

    a. allowances and credits on account of rejection, or damaged, recalled or returned Covered Products previously sold;

    b. customary rebates, price reductions (including shelf stock adjustments), chargebacks, administrative fee arrangements, reimbursements, quantity

and cash discounts to purchasers allowed and taken, including without limitation, with respect to institutions and health care organizations and in respect of Medicare, Medicaid or similar programs;

c. customary amounts for third party transportation, insurance, handling or shipping charges to purchasers; and

d. to the extent separately stated on purchase orders, invoices or other documents of sale, any taxes, duties and other governmental charges levied on or measured by the sale of Covered Products that are paid by or on behalf of an Invoicing Entity, but not franchise or income taxes of any kind whatsoever.

Net Sales shall also include the fair market value of any non-cash consideration received by any Invoicing Entity in connection with the sale, lease, or other transfer of Covered Products. Transfer of a Covered Product within Client or between any of Client and its Affiliates or contractors for sale by the transferee shall not be considered a Net Sale for purposes of ascertaining royalty charges owed to Schrödinger under this Agreement. Notwithstanding anything to the contrary herein, the sale, disposal or use of any Covered Product for marketing, regulatory, development or charitable purposes, such as clinical trials, preclinical trials, compassionate use, named patient use, or indigent patient programs, in each case without consideration, shall not be deemed a sale hereunder. If a Covered Product is sold in combination with another product, device, service or active ingredient, only the amounts allocable to the Covered Product, as determined using practices consistently applied by Client and approved by Schrödinger such approval to not unreasonably be withheld, shall be counted as Net Sales.

B. Royalty Payments.

1. For Covered Products, Client shall pay (or cause its Affiliates to pay) to Schrödinger a royalty as follows:

a. [***] of Net Sales for the first [***] of Net Sales of all Covered Products in each calendar year during or after the Term, and thereafter

b. [***] of Net Sales for all Net Sales of all Covered Products in excess of [***] in each calendar year during or after the Term.

Exhibit 10.13

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

EXCLUSIVE LICENSE AGREEMENT

BETWEEN

CHILDREN'S MEDICAL CENTER CORPORATION

AND

MORPHIC ROCK HOLDING, LLC

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CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

EXCLUSIVE LICENSE AGREEMENT

This Agreement is made and entered into as of the date last written below (the "Effective Date"), by and between CHILDREN'S MEDICAL CENTER CORPORATION, a charitable corporation duly organized and existing under the laws of the Commonwealth of Massachusetts and having its principal office at 300 Longwood Avenue, Boston, Massachusetts, 02115, U.S.A. (hereinafter referred to as "CMCC"), and Morphic Rock Holding, LLC., a business corporation organized and existing under the laws of the State of Delaware and having its principal office at 35 Gatehouse Drive A2, Waltham, MA 02154 (hereinafter referred to as "Licensee"). CMCC and Licensee may also be referred to individually as ("Party") or collectively as ("Parties").

WHEREAS, CMCC is the owner of certain Patent Rights (as defined below) and has the right to grant exclusive licenses under the Patent Rights, subject only to a royalty-free, nonexclusive license granted to the United States Government for those inventions and ensuing patents developed with U.S. Government funding, and certain laws and regulations relating to Federally-funded projects and institutions; and

WHEREAS, as part of its charitable mission, CMCC desires to have the Patent Rights used to promote the public interest; and

WHEREAS, Licensee desires to engage in the development, production, manufacture, marketing and sale of Licensed Products and/or the use of Licensed Processes (as such terms are defined below) and implement a development program as described in this Agreement; and

WHEREAS, in order to promote effective development and distribution of a Licensed Product for the public interest and other purposes as set forth herein, Licensee desires to obtain an exclusive license, within a designated territory and for a prescribed field of use, relating to certain licensed products and processes within the scope of the Patent Rights, subject to the terms and conditions of this Agreement.

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained herein, the Parties hereby agree as follows:

ARTICLE I. DEFINITIONS

For the purpose of this Agreement, the following words and phrases shall have the meanings set forth below:

A. "Affiliate" means any company or other legal entity controlling, controlled by or under common control with a Party. For purposes of the definition of "Affiliate" the term "control" shall mean: (i) the ownership of at least a majority of the ordinary voting power necessary to effect the election of a majority of the board directors or other governing board, or in the case of a for-profit entity, direct or indirect ownership of at least a majority of the stock or participating shares entitled to vote for the election of directors of that entity; or (ii) in the case of a partnership, the power customarily held by a managing partner to direct the management and policies of such partnership; or (iii) in the case of a joint venture, whether in corporate, partnership or other legal form, a prevailing joint economic interest coupled with a managerial role entailing active direction, control and accountability with respect to the business and affairs of the entity.

B. "BCH" means CMCC's Affiliate d/b/a Boston Children's Hospital.

C. "Commercially Reasonable Efforts" means the efforts and resources consistent with practices commonly used in Licensee's industry by companies of similar size and scope as Licensee for a product at a similar state in its development or product life, taking into account product profiles, efficacy, safety, the competitiveness of alternative products in the marketplace, the patent and other proprietary position of the product, regulatory approvals, profitability of the product (taking into account payments under this Agreement), maintaining the priority of rapid and effective development of the technology in Licensee's corporate strategy and other relevant scientific, technical and commercial factors.

D. "Field of Use" means integrin targeting for therapeutic and diagnostic uses in all human and veterinary applications. The Field of Use expressly excludes sales of the Materials as listed in Appendix 3 for the research tool market.

E. "First Commercial Sale" means, with respect to each country: (i) the first sale of any Type 1 Product and Type 2 Product by Licensee or any Sublicensee, following approval of such product's marketing by the appropriate governmental agency, if any such approval is necessary, for the country in which the sale is to be made; or (ii) when governmental approval is not required, the first sale in that country of the respective Type 1 Products and Type 2 Products.

F. "Know-How" means any unpatented manufacturing information, technical information, confidential information, biological knowledge, protein and crystal structure data, testing and analytic methods and specifications in the Field of Use which is embodied in written materials or presented orally, by way of example, powerpoint presentations, electronic mail and the like, and which CMCC owns and has the rights to license, prior to the Effective Date, deriving from the activities of Timothy Springer during the course of his work at BCH on each of the structure targets listed in Appendix 2.

G. "Know-How After Execution" means any unpatented manufacturing information, technical information, confidential information, biological knowledge, protein and crystal structure data, testing and analytic methods and specifications in the Field of Use which is embodied in written materials or presented orally, by way of example, powerpoint presentations, electronic mail and the like, and which CMCC owns and has the right to license, and deriving from the activities solely of Timothy Springer during the course of his work at BCH, and developed on each of the structure targets listed in Appendix 2 after the Effective Date.

H. "Licensed Product(s)" means Type 1 Products and Type 2 Products.

I. "Material(s)" means the Transferred Materials and Progeny and Unmodified Derivatives of those Transferred Materials, but excluding Modifications of the Transferred Materials. For purposes of this definition, Progeny shall mean an unmodified descendant from the Material, such as a virus from virus, cell from a cell, or organism from an organism; Unmodified Derivatives shall mean substances created by the Licensee which constitute an unmodified functional subunit or product expressed by the Transferred Material (such as subclones of unmodified cell lines, purified or fractionated subsets of the original

Material, proteins expressed by DNA/RNA, or monoclonal antibodies secreted by a hybridoma cell line); and Modifications shall mean substances created by the Licensee which contain or incorporate the Material.

J. "Net Sales" means, as determined under U.S. generally accepted accounting principles ("GAAP"), the gross sales invoiced for sales, or other transfers of Licensed Products by Licensee, its Affiliates, its agents, or its Sublicensees for any Licensed Products, less (to the extent actually allowed or incurred and directly related to such sale of Licensed Products) the following amounts:

(a) credits and allowances for price adjustment, shelf stock adjustments, promotional payments, and other similar allowances;

(b) allowances and credits on account of rejection, or damaged, recalled or returned Licensed Products previously sold;

(c) rebates, price reductions, chargebacks, administrative fee arrangements, reimbursements, quantity and cash discounts to purchasers allowed and taken, including without limitation, with respect to institutions and health care organizations and in respect of Medicare, Medicaid or similar programs;

(d) amounts for third party transportation, insurance, handling or shipping charges to purchasers;

(e) taxes, duties and other governmental charges levied on or measured by the sale of Licensed Products whether absorbed by Licensee or paid by the purchaser so long as Licensee's price is reduced thereby, but not franchise or income taxes of any kind whatsoever;

(i) for any sale in which the United States government, on the basis of a royalty-free license pursuant to 35 USC Sec. 202(c) to any Patent Right, requires that the gross sales price of any Licensed Product subject to such Patent Right, be reduced by the amount of such royalty owed Licensor, the amount of such royalty.

Net Sales shall also include the fair market value of any non-cash consideration received by Licensee or any Sublicensee in connection with the sale, lease, or other transfer of Licensed Products. Transfer of a Licensed Product within Licensee or between any of Licensee, Affiliates or Sublicensees or contractors for sale by the transferee shall not be considered a Net Sale for purposes of ascertaining royalty charges owed to CMCC under this Agreement. Notwithstanding anything to the contrary herein, the sale, disposal or use of any Licensed Product for marketing, regulatory, development or charitable purposes, such as clinical trials, preclinical trials, compassionate use, named patient use, or indigent patient programs, in each case without consideration, shall not be deemed a sale hereunder. If a Licensed Product is sold in combination with another product, device, service or active ingredient, only the amounts allocable to the Licensed Product, as determined using practices consistently applied by Licensee and approved by CMCC such approval to not unreasonably be withheld, shall be counted as Net Sales.

K. "New Patent Rights" means new patentable inventions in the Field of Use developed in the laboratory of Dr. Springer and that are directed to the structure targets listed in Appendix 2 and created and/or reduced to practice after the Effective Date of the Agreement and owned solely by CMCC.

L. "Patent Rights" means all of the following intellectual property which CMCC owns and has the rights to license during the Term as hereafter defined:

1. The United States and foreign patents and/or patent applications listed in Appendix 1 attached hereto and incorporated herein by reference and divisionals and continuations thereof.

2. The United States and foreign patents issued from the applications listed in Appendix 1 and from divisionals and continuations of those applications.

3. Claims of United States and foreign continuation-in-part applications, and of the resulting patents, which are directed to the subject matter described in the United States and foreign patent applications described in Appendix 1 or subparagraphs 4 or 5 of this Paragraph L.

4. Claims of all later filed foreign patent applications, and of the resulting patents, which are directed to the subject matter specifically described in the United States patent and/or patent applications described in subparagraphs 1, 2 or 3 of this Article I, Paragraph L.

5. Any reissues, re-examinations, renewals, substitutions, divisions, amendments or extensions of the United States or foreign patents described in subparagraphs 1, 2, 3 or 4 of this Article I, Paragraph L.

M. "Sublicensee" means a person or entity other than Licensee's Affiliate to whom Licensee has granted an arm's length sublicense to Patent Rights, Know-How or Materials as permitted under this Agreement.

N. "Territory" means worldwide.

O. "Term" has the meaning stated in Paragraph A of Article XV.

P. "Transferred Materials" means those materials listed on Appendix 3, which may be updated from time to time upon mutual written agreement of an authorized signatory of each of CMCC and Licensee.

Q. "Type 1 Product(s)" means products and processes the manufacture, use, sale, offer for sale, importation or practice of which absent the license granted under this Agreement would infringe any one of the issued, valid, enforceable, unexpired claim(s) or any one of the pending claim(s) contained in the Patent Rights in the Field of Use. A claim of any issued, unexpired Patent Right shall be presumed to be valid unless and until it has been held to be invalid, unenforceable or unpatentable by a final judgment of a court or other governmental authority of competent jurisdiction from which no appeal can be or is taken and which has not been abandoned, disclaimed, denied or admitted to be invalid or unenforceable through reissue, re-examination or disclaimer or otherwise. A claim of any patent application shall be pending, as used in this Article I, Paragraph Q if it has been pending less than five (5) years from receipt of the first office action on the merits from the United States Patent and Trademark Office. However in the event such

aforementioned pending claim issues after such five (5) year period, such claim will at the time of issuance be a valid claim.

R. "Type 2 Product(s)" means each product or derivative thereof identified within five (5) years of the Effective Date ("Type 2 Product Term") by Licensee, its Affiliates, Sublicensees or contractors which modulates an integrin with a small molecule that does not cause the integrin to adopt an open or intermediate conformation for therapeutic and diagnostic uses, and that is not a Type 1 Product.

ARTICLE II. GRANT of LICENSES AND OPTIONS

A. Licenses. Subject to the terms of this Agreement CMCC hereby grants the following to Licensee in the Field of Use in the Territory until the end of the Term, unless sooner terminated as provided in this Agreement: (i) The right and exclusive license to the Patent Rights to develop, make, use, sell, offer for sale and have sold, import, export and otherwise commercialize Type 1 Products and Type 2 Products; (ii) A non-exclusive license to research, develop, have developed, make, have made, use, sell, offer for sale and have sold, import, export and otherwise commercialize Know-How; and (iii) A non-exclusive license to use Materials in connection with Licensee's research and development of Licensed Products.

B. Option to New Patent Rights. Subject to the terms of this Agreement CMCC hereby grants to Licensee an exclusive first option for an exclusive commercial license to CMCC's ownership interest in New Patent Rights for a period beginning on the Effective Date and expiring [***] months thereafter provided that Licensee pays the annual option fee of [***]at the beginning of the [***]year of the option term whether or not Licensee exercises its option described herein. Upon disclosure of New Patent Rights by CMCC to Licensee, Licensee will have [***] to exercise its exclusive option for an exclusive commercial license to such New Patent Rights. Licensee may exercise such option by written notice to CMCC at any time within such [***]period. The Parties will negotiate fair market value of such New Patent Rights for [***]after Licensee exercises its option, in a range between [***], however in the event that such value is not fair market value at the time of the creation of such New Patent Rights, the Parties will negotiate for fair market

value. Thereafter, to the extent the New Patent Rights are then amended into the existing license subject to such exercise, such New Patent Rights and any additional diligence and development milestones agreed by the Parties shall be added to Appendix 1, Article III and Appendix 4, and shall be deemed Patent Rights under this Agreement and subject to applicable royalty and milestone obligations. For purposes of valuing New Patent Rights, fair market value shall mean the price a reasonable independent third party (without access to the Patent Rights) would pay in consideration for such New Patent Rights in an arm's length transaction. In the event that Licensee does not timely pay the option fee owed to CMCC as described herein, the option rights granted herein shall terminate upon written notice from CMCC, provided that Licensee does not cure such payment default within [***]after receiving such notice.

C. Option to Know-How After the Execution. CMCC hereby grants grant MORPHIC an option for a nonexclusive commercial license to Know-How After Execution for a period beginning on the Effective Date and expiring [***] months thereafter provided that Licensee pays the annual option fee of [***]at the beginning of the [***]of the option term whether or not Licensee exercises its option described herein. Upon disclosure of Know-How After Execution by CMCC to Licensee, Licensee will have [***] to exercise its option for a nonexclusive license to such Know-How After Execution. Licensee may exercise such option by written notice to CMCC at any time within such [***]period. The Parties will negotiate fair market value of such Know-How After Execution for [***] after Licensee exercises its option in a range between [***], however in the event that such value is not fair market value at the time of the creation of such Know-How After Execution, the Parties will negotiate for fair market value. Thereafter, to the extent the Know-How After Execution is then expressly amended into this Agreement subject to such exercise such Know-How After Execution shall be deemed Know-How under the Agreement. For purposes of valuing Know-How After Execution, fair market value shall mean the price a reasonable independent third party (without access to the Know-How) would pay in consideration for such Know-How After Execution in an arm's length transaction. In the event that Licensee does not timely pay the option fee owed to CMCC as described herein, the option rights granted herein shall terminate upon written

notice from CMCC, provided that Licensee does not cure such payment default within [***]after receiving such notice.

D. Notwithstanding anything above to the contrary, CMCC shall retain for itself and its Affiliates a royalty-free, nonexclusive, right to practice and use the Patent Rights for internal research, teaching, educational, and treatment of such Affiliates patients and the right to license for no more than a nominal fee (such as shipping and handling charges) to other academic nonprofit research organizations ("Academic Institutions") to practice and/or use the Patent Rights for internal research, teaching, and educational purposes only. Any such license to such Academic Institutions shall specifically exclude and prohibit commercialization of the Patent Rights unless the Academic Institutions enters into an agreement with Licensee on terms consistent with this Agreement but in other respects agreeable to Licensee in Licensee's sole discretion. CMCC reserves all of its rights to Know-how, and Materials for any lawful purposes.

E. Notwithstanding any other provision of this Agreement, the license and any sublicense shall be subject to the rights of the United States government, if any, under Public Law 96-517, 97-226, and 98-620, codified at 35 U.S.C. sec. 200-212 and any regulations promulgated thereunder; the obligations of CMCC under applicable laws and regulations; and Licensee's warranty to comply with all applicable laws and regulations.

F. Licensee agrees that, if the Patent Rights arose in whole or in part from federally-funded research, Licensed Products leased or sold in the United States shall be manufactured substantially in the United States to the extent required by applicable law or government regulation. Upon the First Commercial Sale and thereafter, Licensee's annual report to CMCC shall certify Licensee's compliance with this provision.

G. The license granted hereunder shall not be construed to confer any rights upon Licensee by implication, estoppel or otherwise as to any inventions, discoveries, know-how, technology or other intellectual property not granted under Paragraphs A, B and C of this Article II.

H. As a condition of the license granted hereunder, Licensee hereby covenants and agrees that it will not use or cause to be used proprietary, non-public information it has acquired

from CMCC or any Affiliate thereof in the course of prosecution of the Patent Rights from CMCC and/or patent counsel prosecuting the Patent Rights on behalf of CMCC. Licensee shall not advise CMCC's counsel prosecuting such Patent Rights to include information in any such patent application that would, to Licensee's knowledge, have a material, negative impact on CMCC's ownership of such rights or the validity of such Patent Right. Such information shall be considered Confidential Information of CMCC and is subject to the provisions of Article VI. Any assignment or sublicense granted by Licensee shall contain an identical commitment by the assignee or Sublicensee.

I. Subject to the terms and conditions of this Agreement, neither CMCC, nor any officer, director, employee, member of its medical staff, or of any CMCC Affiliate, shall be limited or constrained from continuing to engage in related research; or from the development of related or unrelated inventions, discoveries, rights or technology, and from practicing, licensing or sublicensing related or unrelated intellectual property rights arising from inventions occurring after the Effective Date; or from academic publication related thereto; or from entering into agreements and other relationships with other persons or organizations related to matters not expressly within the scope of this Agreement; or from exercising any rights whatsoever with respect to the Materials and Know-how licensed hereunder, subject to the royalty reductions under Article IV, Paragraph A, subparagraph 8.

J. Licensee shall have the right to enter into sublicensing agreements, through multiple tiers, with respect to any of the rights, privileges, and licenses granted hereunder, subject to the terms and conditions hereof. In the event CMCC terminates this Agreement prior to the end of the Term, Licensee shall be responsible for promptly notifying Sublicensees of such termination. Sublicensees so notified may, to the extent their Sublicenses allow, may request CMCC to enter into a direct license with such Sublicensee by sending to CMCC written notice, received no later than thirty (30) days after the termination of this Agreement takes effect, that the Sublicensee:
(i) reaffirms the terms and conditions of this Agreement as it relates to the rights the Sublicensee has been granted under its sublicense with Licensee; (ii) agrees to abide by all of the terms and conditions of this Agreement applicable to Sublicensees and to discharge

directly all pertinent obligations of Licensee which Licensee is obligated hereunder to discharge; and (iii) acknowledges that CMCC shall have no obligations to the Sublicensee other than its pertinent obligations set forth in this Agreement with regard to Licensee. Provided that the Sublicensee notice to CMCC as set forth in this clause is satisfactory, and Sublicensee is not in breach of its sublicense with Licensee, CMCC and Sublicensee shall negotiate in good faith to grant to such Sublicensee license rights and terms equivalent to the sublicense rights and terms which the Licensee shall have previously granted to such Sublicensee, to the extent that those rights were granted by CMCC to the Licensee under this Agreement. CMCC may decline to enter into a direct license agreement where Sublicensee cannot or declines to perform the obligations of Licensee hereunder, including without limitation Development Plan (as defined below) obligations.

K. Licensee agrees that any sublicense granted by it to a Sublicensee shall ensure that Licensee is able to comply with the obligations to CMCC under this Agreement. Any agreement granting a sublicense shall provide that, upon the termination of this Agreement (provided that such Sublicensee is not in breach of such sublicense), each such sublicense will either, at the option of the Sublicensee, terminate or convert to a license directly between the Sublicensee and CMCC, which direct license shall be limited in scope as set forth in such Sublicense and which such conversion shall be contingent upon Sublicensee agreeing to the inclusion of the following provisions in substantially the same form as included herein: V (Reports, Records and Related Matters), VIII (Infringement), IX (Uniform Indemnification and Insurance Provisions), XI (Compliance with Laws; Export Controls), XII (Non-Use of Names), XIII (Assignment), XIV (Dispute Resolution and Arbitration), XV (Term and Termination) and XVII (General Provisions) of this Agreement. Licensee shall use commercially reasonable efforts to include such provisions in each such sublicense it enters. In addition, every sublicense shall contain within it requirements for commercially reasonable due diligence in developing or exploiting the Patent Rights, or selling Licensed Products, as specifically applicable, and shall obligate Licensee to enforce those provisions consistent with achieving Licensee's obligations pursuant to this Agreement. Licensee shall make CMCC a third-party beneficiary of the sublicense entered with a Sublicensee with

respect to XI (Compliance with Laws; Export Controls), IX (Uniform Indemnification and Insurance Provisions), and XII (Non-Use of Names). Licensee agrees to provide to CMCC notice of any sublicense granted to a Sublicensee hereunder and shall forward to CMCC a copy of any and all fully executed sublicense agreements with a Sublicensee within thirty (30) days of execution thereof, which copy may be redacted to exclude information not relevant to the licenses granted hereunder or CMCC's exercise of rights under this Agreement. Licensee further agrees to forward to CMCC annually a copy of such reports received by Licensee from its Sublicensees during the preceding twelve (12) month period as shall be pertinent to a royalty accounting under the applicable sublicense and compliance with the other terms of this Agreement, and which may be redacted to exclude information not relevant to such royalty accounting and compliance.

L. Licensee shall advise CMCC in writing of any consideration received from Sublicensees, and, at CMCC's request, provide such information in mutually agreeable format recognizable by CMCC's data processing systems e.g. Microsoft® Excel®. Without restriction of any remedies Licensee may have in law or equity against a Sublicensee, Licensee shall not accept from any Sublicensee anything of value in lieu of cash payments to discharge Sublicensee's payment obligations under any sublicense or distribution agreement entered by Licensee related to the rights granted under this Agreement or marketing and sale of Licensed Products, without the express written permission of CMCC, which permission shall not be unreasonably withheld, conditioned or delayed, but may take into account a reasonable valuation for purposes of Licensee's payment obligations to CMCC.

M. If, during the Term, Licensee makes any discovery or invention in the course of its activities under this Agreement that is not within the scope of the Patent Rights but necessary to practice the Patent Rights licensed to Licensee hereunder ("Developed Rights"), Licensee hereby covenants that it shall not, nor shall it cause any Affiliate, licensee, or transferee of its rights, to, in whole or in part, enforce against CMCC or any Affiliate of CMCC any of the Developed Rights in any action claiming that the practice of the Patent Rights by CMCC or any Affiliate of CMCC as permitted by this Agreement infringes or misappropriates the Developed Rights. Licensee shall incorporate this

covenant for the benefit of CMCC and its Affiliates in any contractual transfer or license of such Developed Rights with any third-party, such that the third-party is identically bound and the covenant operates for the benefit of CMCC and its Affiliates.

N. Without limiting the foregoing, Licensee will be entitled to sublicense Know-How to contractors for the purpose of carrying out the Development Plan or to a commercial third party as part of a sublicense or option arrangement in connection with the Licensed Products.

ARTICLE III. DUE DILIGENCE AND RELATED MATTERS

A. Licensee, upon execution of this Agreement, shall use Commercially Reasonable Efforts to bring one or more Licensed Products to market. Thereafter, until expiration or termination of this Agreement, Licensee shall keep Licensed Products available to the public, in quantities sufficient to meet market demand, in the Territory, on terms appropriate for public access and public benefit.

B. In addition, Licensee shall use Commercially Reasonable Efforts to implement the written development plan that has been provided hereunder ("Development Plan") within the timeframes set forth therein, which may be amended from time to time pursuant to Paragraph C of this Article. Licensee's initial Development Plan is attached hereto as Appendix 4 and is hereby incorporated herein by reference. Such Development Plan and revisions to such Development Plan under Paragraph C of this Article III disclosed to CMCC shall be considered Licensee's Confidential Information, and shall be subject to the provisions set forth in Article VI.

C. Except for Diligence Specifications as defined in Paragraph D of this Article, CMCC shall not unreasonably withhold its consent to revision of the Development Plan or revision to the Diligence Specifications as defined in Paragraph D when requested in writing in advance by Licensee and the request is supported by evidence reasonably acceptable to CMCC of legal or technical difficulties or delays in the clinical studies or regulatory process that could not reasonably have been avoided; provided that (i) Licensee is proposing and will implement reasonable means of addressing such difficulties or

delays, including by procuring sufficient financial and technical resources; and (ii) that Licensee, its Affiliates and/or Sublicensees have in good faith made Commercially Reasonable Efforts and expended resources contemplated by the Development Plan.

D. Notwithstanding Paragraphs B and C of this Article III, Licensee agrees that Licensee's failure to achieve the following specific requirements of the Development Plan through itself, its Affiliates or its Sublicensees ("Diligence Specifications") shall be sufficient grounds for the actions specified in this Paragraph D:

(i) initiate research on integrin target specified in the Development Plan, [***];

(ii) develop criteria of integrin full antagonism proof of concept in vitro in at least [***] with respect to the integrin target specified in the Development Plan by [***];

(iii) enter into a definitive agreement to obtain additional financing of at least [***];

(iv) initiate research on second integrin target as specified in the Development Plan by [***];

(v) develop criteria of integrin full antagonism proof of concept in vivo in at least two (2) models with respect to the integrin target(s) specified in the Development Plan by [***];

(vi) assign [***] additional full-time persons on the research set forth in the Development Plan by [***]; and

(vii) develop criteria for pre-clinical toxicology studies for the lead molecule, by [***].

The Parties agree that Licensee's failure to achieve any of the Diligence Specifications listed in this paragraph will irreparably harm CMCC's ability to ensure that a Licensed Product is timely developed for the public benefit. In the event Licensee fails to meet any of the Diligence Specifications set forth in this Paragraph D in a timely manner, CMCC shall notify Licensee thereof in writing, and Licensee shall have [***]following the later of the milestone date, if applicable or the date of such notification to establish, through written response to CMCC in reasonably sufficient detail, to the reasonable

satisfaction of CMCC that (i) it has met such objective(s); or (ii) a revision to the Diligence Specification is necessary and appropriate as contemplated above, which shall be established to CMCC's reasonable satisfaction. If such failure is due to (x) legal or technical difficulties or (y) delays in the clinical studies or regulatory process and such difficulties or delays could not reasonably have been avoided, or (z) other reasons beyond the reasonable control of Licensee where Licensee, its Affiliates and/or Sublicensees have in good faith made Commercially Reasonable Efforts and have expended resources contemplated by the Development Plan, then in each case of (x), (y) or (z), Licensee shall submit an action plan to address such difficulties or delays, including as applicable, by procuring sufficient financial and technical resources and CMCC shall reasonably accept such action plan. In the event Licensee fails to establish the foregoing, CMCC shall have the right in its sole discretion to terminate in whole or in part the license granted to Licensee under this Agreement pursuant to Article XV effective immediately.

ARTICLE IV. ROYALTIES AND OTHER PAYMENTS

A. For the rights, privileges and exclusive license granted hereunder, Licensee shall pay to CMCC the following amounts in the manner hereinafter provided. Unless expressly stated otherwise in this Agreement, periodic payment obligations listed below shall endure through the Term, unless this Agreement shall be sooner terminated as hereinafter provided in Article XV. The payments are as follows:

1. License Issue Fee. A license issue fee of [***]which shall be deemed earned and due as of the Effective Date, however payable to CMCC within [***] of the Effective Date.

2. Patent Prosecution Expenses. Payments for accrued past patent prosecution costs for the Patent Rights in the amount of [***]and payments for continuing patent costs for the Patent Rights as set forth in Article VII. Licensee shall pay CMCC such past and continuing prosecution costs respectively within [***] after receipt of an invoice from CMCC.

3. Equity. Within [***]of the Effective Date, Licensee shall issue to CMCC a number of common units of Morphic Rock Holding, LLC, representing [***]of the issued and outstanding units on a fully diluted basis of Licensee as of the Effective Date. The Parties acknowledge that Licensee has already raised in excess of [***] in capital, grants, the sale of debt or equity securities, corporate collaborations or in-kind corporate contributions from an independent third party prior to the Effective Date.

4. Participation in Future Private Equity Offerings. CMCC shall have the right to purchase additional units of Licensee as set forth in Licensee's Amended and Restated Operating Agreement, as amended from time to time.

5. License Maintenance Fee. A license maintenance fee ("License Maintanance Fee") in the amount of [***] per year for the first three (3) anniversary dates of the Effective Date and the amount of [***], payable to CMCC within [***] after each anniversary thereafterduring the Term, as may be offset in each year by Running Royalty payments as set forth below in Paragraph B of this Article IV.

6. Option Fees.The option fees of [***] and [***] respectively as set forth in Article II Paragraphs B and C.

7. Type 1 Product Royalties. Running Royalties in an amount equal to [***] of annual Net Sales of Type 1 Products.

8. Type 2 Product Royalties. Running Royalties for Type 2 Products in an amount equal to [***] of Net Sales. As it pertains to Type 2 Products, the royalty term begins on the First Commercial Sale of each such product in any country and expires ten (10) years therefrom ("Type 2 Royalty Term"). Following such time, the license set forth in Article II, Paragraph A shall be a perpetual, transferable, irrevocable, sublicensable, fully paid-up license without the payment of royalties or other consideration with respect to Type 2 Products. In the event CMCC grants a license to the Know How for use in the Field to any commercial third parties during the Type 2 Royalty Term Running Royalties due on any Type 2 Products shall be reduced by [***] for such products identified after the grant of such commercial license during the Type 2 Product Term.

9. Milestones. Licensee shall make the following payments to CMCC upon the occurrence of the following events ("Milestones") within thirty days after each of the following milestones is first achieved by Licensee, its Affiliates or its Sublicensees with respect to a Type 1 Product. Payments with respect to Milestones shall not be due for any Type 2 Product. For avoidance of doubt, each Milestone payment listed in 6(a)-(d) below shall become payable only once:

   (a) [***] to CMCC within [***] after allowance by the United States Food and Drug Administration ("FDA") or foreign equivalent of the first Investigational New Drug ("IND") application, or comparable application with respect to any Type 1 Product.

   (b) [***] to CMCC within [***] after the dosing of the second patient in Phase II clinical trial with respect to any Type 1 Product.

   (c) [***] to CMCC within [***] after the dosing of the second patient in Phase III clinical trial with respect to any Type 1 Product.

   (d) [***] to CMCC within [***] after approval by the FDA or foreign equivalent of the first NDA, BLA, or comparable application with respect to any Type 1 Product.

10. Non-Royalty Sublicense Income. In the event Licensee has granted options or sublicenses to Sublicensees under this Agreement, Licensee shall pay CMCC the following percentages on payments it receives from Sublicensee (other than royalties based on Net Sales) including but not limited to sublicense issue fees, any lump sum payments, option fees, milestone payments, technology transfer payments or other similar fees, payments, and cash consideration, but excluding, in any event, equity issuances, payments for patent prosecution or enforcement of the Patent Rights, research and development payments or payments for capital equipment expenses ("Non-Royalty Sublicense Income"):

   (i) [***] of all Non-Royalty Sublicense Income, if the option or such sublicense is granted prior to filing an IND on each option or sublicensed asset; and

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

   (ii) [***] of all Non-Royalty Sublicense Income, if the option or sublicense is granted after filing an IND on each optioned or sublicensed asset.

B. Notwithstanding anything herein to the contrary, any Running Royalties subsequently due on Net Sales of Licensed Products, if any, for each such year shall be creditable against the License Maintenance Fee for said year. License Maintenance Fees paid in excess of royalties in a given year shall not be creditable against royalties due in future years.

C. No multiple royalties shall be payable because any Licensed Product, its manufacture, use, lease or sale are, or shall be, covered by more than one patent or patent application of the Patent Rights licensed to Licensee under this Agreement.

D. All payments shall be paid in United States dollars in Boston, Massachusetts, or at such other place as CMCC may reasonably designate consistent with the laws and regulations controlling in any foreign country. If the currency conversion shall be required in connection with the payments of royalties or other amounts hereunder, the conversion shall be made by using the exchange rate published in the Wall Street Journal on the last business day of the calendar quarterly reporting period to which such royalty payments relate or if such exchange rate is unavailable, the exchange rate normally used by Licensee for conversion of revenue owed to Licensee.

E. Payment of Running Royalties specified in this Article IV shall be made by Licensee to CMCC within [***] after March 31, June 30, September 30 and December 31 each year during the Term covering the quantity of Licensed Products sold by Licensee during the preceding calendar quarter. The last such payment shall be made within [***] days after termination of this Agreement. All payments set forth in this Agreement shall, if overdue, bear interest until payment at a per annum rate of [***] above the prime rate as reported in the Wall Street Journal eastern edition on the due date. The payment of such interest shall not foreclose CMCC from exercising any other rights it may have as a consequence of the lateness of any payment.

ARTICLE V. REPORTS, RECORDS AND RELATED MATTERS

A. Licensee shall keep, and shall require its Affiliates and Sublicensees to keep, full, true and accurate books and records, including books of account in accordance with GAAP, in sufficient detail to enable CMCC to determine Licensee's compliance with this Agreement, including diligence with respect to development as set forth in Article III, and the royalty and other amounts payable to CMCC under this Agreement. Said books and records, including books of account in accordance with GAAP, shall be kept at Licensee's principal place of business or the principal place of business of the appropriate division of Licensee to which this Agreement relates. Said books and the supporting data shall be retained for at least [***] following the end of the calendar year to which they pertain or such longer period as required by applicable law, rule or regulation.

B. CMCC shall have the right to inspect, copy and audit, on [***] notice, the books and records described above from time to time to verify the reports provided for herein or compliance in other respects with this Agreement. CMCC or its agents shall perform such inspection, copying and auditing at CMCC's expense during Licensee's regular business hours, however pursuant to such audit, in the event there is a discrepancy of amounts owed to CMCC of greater than [***], then Licensee shall pay all expenses of such audit.

C. Until the later of First Commercial Sale of a Licensed Product or the last development milestone, Licensee shall provide to CMCC at least [***] prior to the end of each calendar year an annual report reasonably detailing the activities of Licensee and Licensee's Affiliates and Sublicensees to demonstrate Licensee is meeting its development and diligence obligations under this Agreement, including but not limited to, research and development activities of Licensee or its Sublicensees and Affiliates; the progress of obtaining regulatory approvals, with appropriate documentation; strategic alliances and manufacturing, sublicensing and marketing efforts ("Progress Report"). In addition to the required Progress Report, Licensee shall also report on its progress under the Development Plan from time to time at CMCC's written request

however Licensee shall not be required to report more than twice a year. CMCC agrees that Development Plans and Progress Reports provided to CMCC shall be considered Licensee's Confidential Information, and shall be subject to the provisions set forth in Article VI.

D. After First Commercial Sale, within [***] after the end of each calendar quarter, Licensee shall deliver to CMCC, at Licensee's expense, true and accurate royalty reports for the said preceding quarter, in sufficient detail to calculate the amount of such royalty owed to CMCC under this Agreement. These reports shall, at CMCC's request, be provided by Licensee in an electronic or other format compatible with CMCC's data processing and/or license management systems mutually agreeable to the Parties e.g. in Microsoft® Excel®. Reports shall include at least the following:

1. Number of Licensed Products manufactured and sold.

2. Number of Licensed Products sold to Boston Children's Hospital.

3. Total Net Sales for Licensed Products sold, specified by country.

4. Applicable deductions and adjustments.

5. Total royalties payable to CMCC.

6. Payments received by Licensee from Affiliates and Sublicensees.

7. To the extent legally required, Licensed Products manufactured and sold to the U.S. Government, segregating those sold at a profit from those sold at cost in light of any royalty-free, nonexclusive license that may heretofore have been granted to the U.S. Government.

8. Royalties and fees received from Sublicensees.

E. Licensee acknowledges that policies of CMCC, Harvard Medical School and affiliated organizations, relating to, *inter alia*, conflicts of interest and intellectual property, may affect certain direct and indirect arrangements between inventors and Licensee or related organizations. During the Term, to the extent Licensee becomes actually aware,

Licensee shall notify CMCC in writing at least [***] before, or immediately thereafter if Licensee or its subsidiaries plans to enter or enters into any agreement other than this Agreement with or involving Dr. Timothy Springer, or his family, relatives or members or staff of his laboratories, whether relating to sponsored research, consulting, board membership, securities, or otherwise. Licensee's notice to CMCC shall include a detailed description of all proposed terms and conditions. Licensee shall not enter into such an agreement if it would violate such policies unless the terms and conditions of the agreement have been duly approved by CMCC or its Affiliates pursuant to such policies.

ARTICLE VI. CONFIDENTIALITY

A. Each Party agrees, during the Term and for [***] after termination of this Agreement to maintain the confidentiality of the Confidential Information of the other Party. "Confidential Information" shall mean (1) information acquired by Licensee pursuant to Article II Paragraph H; (2) information disclosed to CMCC pursuant to Article II Paragraph K, Article III Paragraphs B, C and Article V Paragraphs C, D, E or (3) other information relevant to this Agreement that the disclosing Party marks as confidential upon disclosure to the receiving Party. The Parties agree not to disclose the other Party's Confidential Information to any third-party without the prior written consent of such other Party, and to use such Confidential Information only as necessary to fulfill its obligations, or comply with any laws or in the reasonable exercise of rights granted to it under this Agreement. Furthermore, either Party may disclose Confidential Information of the other Party to (a) its Affiliates, and to its and their officers, directors, employees, consultants, and agents in each case who have a specific need to know such Confidential Information and who are bound by a like obligation of confidentiality and restriction on use, or (b) to the extent such disclosure is required to comply with applicable law or regulation or the order of a court of competent jurisdiction, to defend or prosecute litigation or to comply with the rules of the U.S. Securities and Exchange Commission, any stock exchange or listing entity; *provided, however,* that the receiving Party provides prior written notice of such disclosure to the disclosing Party, to the extent legally permissible, and takes reasonable and lawful actions to avoid or minimize

the degree of such disclosure. Notwithstanding any other provision of this Agreement, each Party may disclose and use Confidential Information of the other Party as necessary to file or prosecute patent applications, prosecute or defend litigation or otherwise establish rights or enforce obligations under this Agreement, or to submit regulatory filings. Similarly, notwithstanding any other term of this Agreement, and in addition to (a) and (b) of this Paragraph A, CMCC shall have the right to disclose the nature, terms and copy of the Agreement to oversight bodies of CMCC, such as the institutional review board or conflicts of interest committee, and to disclose the nature of this Agreement (without including financial terms of the license but including reasonable detail about its overall structure, business goals and status of active clinical trials) in its organizational communications. However Confidential Information does not include any portion of the Confidential Information which:

(i) at the time of disclosure is in the public domain;

(ii) after disclosure hereunder enters the public domain, except through breach of this Agreement by the receiving Party;

(iii) the receiving Party can demonstrate was in the receiving Party's possession prior to the time of disclosure by or on behalf of the disclosing Party hereunder, and was not acquired directly or indirectly from the disclosing Party;

(iv) becomes available to the receiving Party from a third-party which, to the knowledge of the receiving Party, is not legally prohibited from disclosing such Confidential Information; or

(v) the receiving Party can demonstrate was developed by or for the receiving Party independently of the disclosure of Confidential Information by the disclosing Party or its Affiliates.

B. Licensee and CMCC agree that the confidentiality obligations hereunder shall require that each Party use confidentiality procedures and practices as each would use for its own confidential information of a similar nature.

C. Licensee agrees that nothing herein shall prevent CMCC from disclosing or publishing CMCC's Confidential Information, or create any legal liability for doing so, irrespective of whether such information comprises Know-How, Structure Targets or Materials.

ARTICLE VII. PATENT PROSECUTION

A. CMCC shall apply for, seek prompt issuance of, and maintain during the Term, the Patent Rights set forth in Appendix 1. The specifications of any such patent application and any patent issuing thereon shall state, to the extent applicable and legally required, "This invention was made with government support under [contract] awarded by [Federal agency]. The government has certain rights in this invention." The prosecution, filing and maintenance of all Patent Rights applications and patents shall be the primary responsibility of CMCC in its sole but reasonable discretion, except that Licensee shall have the right and reasonable opportunities to review and provide input on, and shall cooperate with CMCC in, all preparation, filing, prosecution and maintenance of the Patent Rights. CMCC shall instruct the patent counsel prosecuting such Patent Rights to reasonably consider incorporating the comments and requests of Licensee or its patent counsel and to send copies to Licensee and its patent counsel of all patent prosecution documents that are received from or filed with the United States Patent and Trademark Office. CMCC reserves the sole right to make all final decisions with respect to the preparation, filing, prosecution and maintenance of such patent applications and patents for the Patent Rights.

B. Licensee shall reimburse CMCC for all present and future patent costs incurred by CMCC, and [***] for past patent costs incurred by CMCC, for the preparation, filing, prosecution and maintenance of patents underlying the Patent Rights. Upon request of CMCC, and only upon such CMCC request, Licensee agrees to have CMCC's patent counsel directly bill Licensee and Licensee shall directly pay such invoices in compliance with such counsel's customary business terms. If Licensee elects to no longer pay the expenses of a patent application or patent included within Patent Rights, Licensed Products or Licensed Processes, Licensee shall notify CMCC not less than [***] prior to such action and shall thereby surrender its rights under such patent or patent application. Such notice shall not relieve Licensee from responsibility to reimburse

CMCC for patent-related expenses incurred prior to the expiration of the [***] notice period (or such longer period specified in Licensee's notice). CMCC shall then be free to license its rights to that patent or patent application to any other party on any other terms.

C. In the event CMCC elects, in its sole discretion, not to pursue, maintain or retain a particular Patent Right licensed to Licensee hereunder, then CMCC shall so notify Licensee as promptly as practicable, but in any event no less than [***] prior to abandonment, and, subject to the rights of the United States government and any other contractual obligations to research sponsors, Licensee may in CMCC's name, assume the filing, prosecution and/or maintenance of such application or patent at Licensee's expense. In such event, CMCC shall provide to Licensee any authorization necessary to permit Licensee to pursue and/or maintain such Patent Right.

D. With respect to the prosecution or enforcement of any patent rights arising from joint inventions that may be related to the Patent Rights or any patent right claiming or disclosing a joint invention, the Parties shall negotiate in good faith either an amendment to this Agreement or separate agreement for a mechanism for prosecuting or enforcing such patent rights.

ARTICLE VIII. INFRINGEMENT

A. Licensee and CMCC shall each inform the other promptly in writing with reasonably sufficient facts of any alleged infringement by a third-party of the Patent Rights in the Field of Use within the scope of this Agreement and of any available evidence thereof.

B. Licensee will have the first right, but not the obligation, at its own costs and expense, to defend the Patent Rights throughout the Territory with respect to the Field of Use (subject to consultation with CMCC on strategy, filings and selection and use of outside counsel), provided that Licensee will not settle or compromise any claim, without the prior approval of CMCC, which may not be withheld, conditioned or delayed, unreasonably and will not make any admission as to CMCC without the prior approval of CMCC.

C. During the Term, Licensee shall have the first right, but not the obligation, to prosecute at its own expense any infringement of the Patent Rights provided however that if such alleged infringer is an academic institution, a non-profit entity or a foundation (each a "NP Party"), then to the extent Licensee's rights to prosecute such action are not limited or compromised by such delay because of a tolling or statute of limitations with respect to bringing a cause of action, CMCC shall have two (2) months from receipt from Licensee of sufficient facts of alleged infringement so that CMCC may investigate and persuade such NP Party to desist. Licensee shall not take any action against such NP Party during such two month period. If CMCC is unsuccessful within such two months or waives its initial right with respect to a NP Party, then Licensee shall have the right to proceed as set forth herein. CMCC may join Licensee as a party plaintiff in any such suit described herein, at its own expense, and hereby consents to join Licensee as a party plaintiff, at Licensee's expense, if CMCC is required as a necessary party for such suit. Any recovery of damages by Licensee for each such suit shall be applied first in satisfaction of any unreimbursed expenses and legal fees of CMCC and Licensee relating to such suit and next toward reimbursement of CMCC for any payments under Article IV past due or withheld and applied pursuant to this Article VIII. Any balance remaining will then be divided [***] to Licensee and [***] to CMCC. Notwithstanding the foregoing, such right to bring such an infringement action permitted under this Paragraph C shall remain in effect only for so long as the license granted hereunder remains exclusive. No settlement, consent judgment or other voluntary final disposition of the suit may be entered into without the consent of CMCC, which consent shall not be unreasonably withheld, conditioned or delayed. Licensee shall indemnify CMCC against any order for costs that may be made against CMCC in such proceedings caused by Licensee which are not due to the negligence, recklessness or intentional misconduct of any CMCC Indemnitee (defined below), breach by CMCC of any of its obligations under this Agreement or CMCC's use of any Patent Right.

D. If within [***] after having been notified of any alleged infringement, Licensee shall have been unsuccessful in persuading the alleged infringer to desist or alternatively actively negotiating a license agreement with such alleged infringer and shall not have brought or shall not be diligently prosecuting an infringement action, or if Licensee shall notify

CMCC of its intention not to bring suit against any alleged infringer then, CMCC shall have the right, but shall not be obligated, to prosecute at its own expense any infringement of the Patent Rights.

E. In the event Licensee shall undertake the enforcement and/or defense of the Patent Rights by litigation pursuant to Paragraph C of this Article VIII, Licensee may withhold up to [***] of the payments otherwise thereafter due to CMCC under Article IV above and apply the same toward reimbursement of up to [***] of Licensee's expenses, including reasonable attorneys' fees, in connection therewith, provided that Licensee sends a quarterly report to CMCC detailing such expenses, offset and withholdings.

F. In the event that a declaratory judgment action alleging invalidity or non-infringement of any of the Patent Rights shall be brought against Licensee, CMCC, at its option, shall have the right, within [***] after commencement of such action, to participate in the defense of the action at its own expense under the lead of Licensee however in collaboration with CMCC.

G. In any infringement suit which either Party may institute to enforce the Patent Rights pursuant to this Agreement, the other Party hereto shall cooperate in all reasonable respects and, to the extent reasonably possible, have its employees testify when requested and make available relevant records, papers, information, samples, specimens, and the like.

H. Licensee shall during the exclusive period of this Agreement have the sole right subject to the terms and conditions hereof to sublicense any alleged infringer for future use of the Patent Rights to the extent licensed by this Agreement. Any upfront fees paid to Licensee as part of such a sublicense shall be shared between Licensee and CMCC as if they were Non-Royalty Sublicensing Income.

ARTICLE IX. UNIFORM INDEMNIFICATION AND INSURANCE PROVISIONS

A. Licensee shall indemnify, defend and hold harmless CMCC, its Affiliates, current or future directors, trustees, officers, faculty, medical and professional staff, employees,

students and agents and their respective successors, heirs and assigns (the "CMCC Indemnitees"), against any third party claim, liability, cost, damage, deficiency, loss, expense or obligation of any kind or nature (including without limitation reasonable attorneys' fees and other costs and expenses of litigation) ("Loss") incurred by or imposed upon the CMCC Indemnitees or any one of them in connection with any third party claims, suits, actions, demands or judgments arising out of any theory of product liability (including, but not limited to, actions in the form of tort, warranty, or strict liability) concerning any product, process or service made, used or sold pursuant to any right or license granted under this Agreement.

B. Licensee's indemnification under Article IX, Paragraph A above shall not apply to any Loss to the extent that it is attributable to the negligent activities, recklessness or intentional misconduct of the CMCC Indemnitees or breach of an obligation by CMCC under this Agreement.

C. Licensee agrees, at its own expense, to provide attorneys reasonably acceptable to CMCC to defend any actions brought or filed against any party indemnified hereunder that are subject to the indemnification obligations of Licensee contained herein.

D. Beginning at the time as any such product, process or service is being commercially distributed or sold (other than for the purpose of obtaining regulatory approvals) by Licensee or by a Sublicensee, Affiliate or agent of Licensee, Licensee shall, at its sole cost and expense, procure and maintain commercial general liability insurance in amounts not less than [***] per incident and [***] annual aggregate and naming the CMCC Indemnitees as additional insureds. Such commercial general liability insurance shall provide (i) product liability coverage and (ii) contractual liability coverage for Licensee's indemnification under Article IX, Paragraphs A through B of this Agreement. If Licensee elects to self-insure all or part of the limits described above (including deductibles or retentions which are in excess of [***] annual aggregate), such self-insurance program must be acceptable to CMCC and the Risk Management Foundation of the Harvard Medical Institutions, Inc. The minimum amount of insurance coverage required under this Article IX, Paragraph D, shall not be construed to create a limit of

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

Licensee's liability with respect to its indemnification under Article IX, Paragraphs A through B of this Agreement.

E. Licensee shall provide CMCC with written evidence of such insurance upon request of CMCC. Licensee shall provide CMCC with written notice at least [***] prior to the cancellation, non-renewal or material change in such insurance. Notwithstanding any other term of this Agreement, if Licensee does not obtain replacement insurance providing comparable coverage within such [***] period, CMCC shall have the right to terminate this Agreement effective at the end of such [***] period without notice of any additional waiting periods.

F. Licensee shall maintain such commercial general liability insurance during (i) the period that any such product, process or service is being commercially distributed or sold (other than for the purpose of obtaining regulatory approvals) by Licensee or by a Sublicensee, Affiliate or agent of Licensee and (ii) a reasonable period after the period referred to above which in no event shall be less than [***].

G. The provisions of this Article IX survives expiration or termination of this Agreement.

H. EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, CMCC MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OF NON-INFRINGEMENT, WITH RESPECT TO ANY MATTER WITHIN THE SCOPE OF THIS AGREEMENT, INCLUDING WITHOUT LIMITATION ANY WARRANTY WITH RESPECT TO THE PATENT RIGHTS, LICENSED PRODUCTS, MATERIALS, OR ANY PATENT, TRADEMARK, SOFTWARE, TRADE SECRET, TANGIBLE RESEARCH PROPERTY, MATERIALS, INFORMATION OR DATA LICENSED OR OTHERWISE PROVIDED TO LICENSEE HEREUNDER, AND HEREBY DISCLAIMS THE SAME.

ARTICLE X. REPRESENTATIONS

A. Each Party hereby represents to the other Party as follows:

1. It is a company or corporation duly organized, validly existing and in good standing under the laws of the jurisdiction in which it is incorporated or organized, and has full corporate or other power and authority and the legal right to own or license and operate its property and assets and to carry on its business as it is now being conducted and as contemplated in this Agreement.

2. This Agreement has been duly executed and delivered on behalf of such Party, by signatories duly authorized to enter into this Agreement.

B. CMCC hereby represents to Licensee that

1. As of the Effective Date, to the best knowledge of the Technology and Innovation Development Office of Boston Children's Hospital ("TIDO"), CMCC is the owner of its right, title and interest in and to the Patent Rights, and the Patent Rights are free and clear of any liens, charges and encumbrances. In addition, neither the Office of General Counsel of CMCC nor the Technology and Innovation Development Office of Boston Children's Hospital ("TIDO") have received notice of any claim made against CMCC asserting the invalidity, misuse, or unenforceability of any of the Patent Rights or challenging CMCC's ownership of the Patent Rights and to the best knowledge of TIDO, no such claim has been threatened.

2. As of the Effective Date, TIDO has no knowledge of any activities by third parties that would constitute infringement or misappropriation of the Patent Rights within the Field of Use.

ARTICLE XI. COMPLIANCE WITH LAWS; EXPORT CONTROLS

A. Licensee shall comply with all applicable laws and regulations, including, without limitation, statutes and regulations affecting drug testing, development, marketing and distribution; laws and implementing regulations of the Department of Commerce governing intellectual property in federally-funded inventions; and Export Administration Regulations of the United States Department of Commerce issued pursuant to the Export Administration Act of 1979 (50 App. U.S.C. §2401 et. seq.). Licensee understands and acknowledges that transfer of certain technical data, computer

software, laboratory prototypes and other commodities is subject to United States laws and regulations controlling their export, some of which prohibit or require a license for the export of certain types of technical data, to certain specified countries. CMCC neither represents that a license shall not be required, nor that if required, it shall be issued. Licensee hereby represents and warrants that it will comply with all United States laws and regulations, and any applicable similar laws and regulations of any other country, controlling the export of commodities and technical data, that it will be responsible for any violation of such by Licensee and/or its Affiliates and/or Sublicensees, and that it will defend and hold CMCC, its Affiliates and their officers, directors, employees, agents, and medical staff harmless in the event of any third party legal action of any nature occasioned by such violation, and any action by any governmental agency or authority, relating to any asserted illegality or regulatory violation in the development, production, approval, marketing, sale, storage, manufacture, distribution, export or commercialization of Licensed Products or Licensed Processes.

B. It is the intention of the Parties hereto to comply with all applicable laws, rules, and regulations, including (i) the federal anti-kickback statute (42 U.S.C. §1320a-7b) and related safe harbor regulations, and (ii) the Limitation Certain Physician Referrals (42 U.S.C. §1395nn, the "Stark Law"). Accordingly, the Parties agree and acknowledge that no consideration received under this Agreement is, or is intended to be, a prohibited payment for the recommending or arranging for the referral of business or ordering of items or services, nor is any such consideration intended to induce illegal referrals of business.

ARTICLE XII. NON-USE OF NAMES

Licensee will not use the name, names, logos or trademarks of CMCC or any CMCC Affiliates, nor the name or photograph or other depiction of any employee or member of the staff of CMCC or such Affiliates, nor any adaptation of any of the foregoing, in any advertising, promotional, or sales literature without, in each case, prior written consent from CMCC and from the individual staff member, employee, or student if such individual's name, photograph or depiction is used. Notwithstanding the above, Licensee may state that it is

licensed by CMCC under one or more patents and/or applications consistent with this Agreement, and Licensee may comply with disclosure requirements of all applicable laws relating to its business, including United States and state security laws. In addition, Licensee may refer to publications by staff of BCH in the scientific literature.

ARTICLE XIII. ASSIGNMENT

CMCC may assign this Agreement at any time without the prior written consent of Licensee to an Affiliate in connection with the assignment of the Patent Rights. In addition, CMCC may assign its right to receive payment hereunder (but not its obligations hereunder) to any other party without the prior consent of Licensee. Except as otherwise provided herein, this Agreement is not assignable or delegable, in whole or in part, by either Party without the prior written consent of the other Party acting through an authorized designee, and other than as otherwise permitted in this Paragraph, any purported assignment otherwise shall be void and of no effect. Notwithstanding the foregoing, (1) Licensee may assign this Agreement to an Affiliate, or (2) in the event Licensee merges with another entity, is acquired by another entity, or sells all or substantially all of its assets to another entity to which this Agreement relates, Licensee may assign its rights and obligations hereunder to the surviving or acquiring entity if: (i) Licensee is not then in breach of this Agreement; (ii) the proposed assignee has a net worth at least equivalent or greater to the net worth Licensee had as of the Effective Date; (iii) the proposed assignee has or will have sufficient available resources, including liquid financial resources that will be committed in order to satisfy its obligations hereunder; (iv) Licensee provides written notice of the assignment to CMCC, together with documentation sufficient to demonstrate the requirements set forth in subparagraphs (i) through (iii) above, at least thirty (30) days after the effective date of the assignment; and (v) CMCC receives from the assignee, in writing, at least thirty (30) days after the effective date of the assignment: (a) reaffirmation of the terms of this Agreement; (b) an agreement to be bound by the terms of this Agreement; (c) an agreement to perform the obligations of Licensee under this Agreement. Any and all rights of Licensee hereunder may be exercised by one or more Affiliates of Licensee, without the need to sublicense, *provided, however,* that it is understood that all activities of such Affiliates are subject to the

terms of this Agreement and that Licensee will remain obligated to CMCC for the compliance by Licensee and its Affiliates with the terms of this Agreement.

ARTICLE XIV. DISPUTE RESOLUTION AND ARBITRATION

A. Any and all claims, disputes or controversies arising under, out of, or in connection with this Agreement, which have not been resolved by good faith negotiations between the Parties as described below, shall be resolved by final and binding arbitration in Boston, Massachusetts, in accordance with the rules then obtaining applicable to the appointment of a single arbitrator of the American Health Lawyers Association, or in the event such arbitration is not then available under those rules, the rules of the American Arbitration Association ("AAA"). All expenses and costs of the arbitrators and the arbitration in connection therewith will be shared equally, except that each Party will bear the costs of its prosecution and defense, including without limitation attorneys' fees and the production of witnesses and other evidence. Any award rendered in such arbitration shall be final and may be enforced by either Party in a court of competent jurisdiction.

B. Notwithstanding the foregoing, prior to commencing any arbitration, a Party must inform the other Party in writing of the dispute and the desire to commence arbitration within [***] if the dispute is not amicable resolved by good faith negotiations between the parties. Upon receipt of such notice through such [***] period the parties shall negotiate in good faith a resolution of the matter. If the matter is not resolved within the first [***] the parties shall escalate the matter to the CEO of the Licensee and the CMCC's Senior Director of Technology and Innovation Development Office, Vice President of Research Administration or their respective designee. If the Parties are unable to resolve such dispute within such [***] period, either party may thereafter bring an arbitration claim pursuant to Article XIV Paragraph A above.

C. Notwithstanding the foregoing, nothing in this Agreement shall be construed to waive any rights or timely performance of any obligations existing under this Agreement, including without limitation Licensee's obligations to make royalty and other payments, and also, unless CMCC has terminated the Agreement, Licensee's obligation to

continue due diligence and development obligations. Licensee agrees that it shall not withhold or offset such payments, and agrees that Licensee's sole remedy for alleged breaches by CMCC is pursuant to this Article XIV.

D. Notwithstanding any other term of this Agreement, prior arbitration shall not be required, nor shall any arbitrator have the power to enjoin, notice of termination or effective termination of the license by a Party pursuant to Paragraphs B, C or D of Article XV of this Agreement.

ARTICLE XV. TERM AND TERMINATION

A. The term ("Term") of this Agreement, with respect to any Type 1 Product or Type 2 Product, as applicable, in a country, begins on the Effective Date and expires on the date of the last expiring Patent Right covering a Type 1 Product in such country, however in the case of Type 2 Products the Term begins on the Effective Date and runs for the duration of the Type 2 Royalty Term.

B. Notwithstanding Article XIV of this Agreement, CMCC may terminate this Agreement immediately upon (1) the bankruptcy, legal insolvency, liquidation, dissolution or cessation of operations of Licensee; or the filing of any voluntary petition for bankruptcy, dissolution, liquidation or winding-up of the affairs of Licensee; or any assignment by Licensee for the benefit of creditors; or the filing of any involuntary petition for bankruptcy, dissolution, liquidation or winding-up of the affairs of Licensee which is not dismissed within [***] of the date on which it is filed or commenced; or (2) upon any final judicial or administrative determination that this Agreement violates, or if continued would violate, in a substantial manner, any provision of the Federal Internal Revenue Code, applicable rights of the United States or obligations of CMCC under Title 15 of the United States Code, or other Federal or State laws applicable to CMCC; or (3) in the circumstances providing for immediate termination as described in Article III of this Agreement.

C. CMCC may terminate this Agreement upon [***] prior written notice in the event of Licensee's failure to pay to CMCC royalties due and payable hereunder in a timely manner, unless Licensee shall make all such payments to CMCC within said [***] period.

Notwithstanding Article XIV of this Agreement, upon the expiration of the [***] period, if Licensee shall not have made all such payments to CMCC, the rights, privileges and licenses granted hereunder shall terminate without further action by CMCC.

D. Except as otherwise provided in Paragraphs B and C above, and notwithstanding Article XIV of this Agreement, in the event that either Party shall default in any material respect in the performance of any obligations under this Agreement, and the default has not been remedied to the other Party's reasonable satisfaction within sixty (60) days after the date of notice in writing of such default, such other Party may by written notice to the defaulting Party terminate this Agreement effective immediately or upon such date indicated in such notice.

E. Notwithstanding Article XIV of this Agreement, CMCC may terminate this Agreement upon [***] written notice to Licensee if Licensee or Licensee's Affiliates, or Sublicensee challenge, in a judicial or administrative proceeding, the validity of any Patent Right licensed hereunder, provided that Licensee has not revoked or caused to be revoked such proceeding within such [***] period.

F. Licensee shall have the right to terminate this Agreement at any time upon [***] prior written notice to CMCC.

G. Upon termination of this Agreement for any reason, nothing herein shall be construed to release either Party from any obligation that matured prior to the effective date of such termination.

H. Upon or before the effective date of any termination by CMCC or Licensee, Licensee shall return or destroy all Materials, and certify in writing to CMCC that it has done so. Licensee hereby consents to an injunction to compel compliance with this section, in the event it has failed to comply, and shall reimburse CMCC for all costs and fees of any litigation undertaken by CMCC to enforce this provision.

ARTICLE XVI. PAYMENTS, NOTICES, AND OTHER COMMUNICATIONS

All notices, reports and/or other communications made in accordance with this Agreement shall be sufficiently made or given if delivered by hand, delivered by facsimile (with mechanical confirmation of transmission), or sent by overnight receipted mail, postage prepaid, or by reasonable, customary and reliable commercial overnight carrier in general usage, and addressed as follows:

In the case of CMCC:

Senior Director
Technology & Innovation Development Office-Mailstop BCH3183
Boston Children's Hospital
300 Longwood Avenue
Boston, MA 02115

Payments shall be transmitted by reliable means to the same addressee, payable to Boston Children's Hospital.

In the case of Licensee:

Chief Executive Officer
Morphic Rock Therapeutic, LLC
35 Gatehouse Drive A2
Waltham, MA 02154

With a copy, which shall not constitute notice, to:

Foley Hoag LLP
155 Seaport Boulevard
Boston, MA
Attn: Mark A Haddad, Esq.

or such other address as either Party shall notify the other in writing. **NOTICE SHALL BE EFFECTIVE UPON RECEIPT.**

ARTICLE XVII. GENERAL PROVISIONS

A. All rights and remedies hereunder will be cumulative and not alternative. This Agreement shall be construed and governed by the laws of the Commonwealth of Massachusetts without regard to any provision for the conflicts of laws.

B. This Agreement may be amended only by written agreement signed by the Parties.

C. It is expressly agreed by the Parties hereto that CMCC and Licensee are independent contractors and nothing in this Agreement is intended to create an employer relationship, joint venture, or partnership between the Parties. No Party has the authority to bind the other.

D. This Agreement constitutes the entire agreement between the Parties with respect to the subject matter hereof and supersedes all proposals, representations, negotiations, agreements and other communications between the Parties, whether written or oral, with respect to the subject matter hereof. Where inconsistent with the terms of any contemporaneous related agreements (such as sponsored research agreements), terms in this Agreement shall control.

E. If any provisions of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions of this Agreement shall not be impaired thereby.

F. This Agreement may be executed in any number of counterparts, including by email of a scanned copy, each of which shall be deemed an original as against the Party whose signature appears thereon, but all of which taken together shall constitute but one and the same instrument.

G. The failure of either Party to assert a right to which it is entitled, or to insist upon compliance with any term or condition of this Agreement, shall not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition by the other Party.

H. Licensee agrees to mark any Licensed Products sold in the United States with all applicable United States patent numbers. All Licensed Products shipped to or sold in other countries shall be marked in such a manner as to conform with the patent laws and practices of the country of manufacture or sale.

I. Each Party hereto agrees to execute, acknowledge and deliver such further instruments as may be necessary or appropriate to carry out the purposes and intent of this Agreement.

J. The paragraph headings contained in this Agreement are for reference purposes only and shall not in any way affect the meaning or interpretation of this Agreement.

K. Each Party shall be excused from liability for the failure or delay in performance of any obligation under this Agreement by reason of any event beyond such Party's reasonable control, including, but not limited to, acts of God, fire, flood, explosion, earthquake, or other natural forces, war, civil unrest, terrorism, accident, destruction or other casualty, any lack or failure of transportation facilities, any lack or failure of supply of raw materials, any strike or labor disturbance, or any other event similar to those enumerated above. Such excuse from liability shall be effective only to the extent and duration of the event(s) causing the failure or delay in performance, provided that the Party has not caused such event(s) to occur. All delivery dates under this Agreement that have been affected by force majeure shall be tolled for the duration of such force majeure.

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date last written below.

CHILDREN'S MEDICAL CENTER CORPORATION		MORPHIC ROCK HOLDING, LLC	
By:	/s/ Irene Abrams	By:	/s/ Praveen Tipirneni
Name:	Irene Abrams	Name:	Praveen Tipirneni
Title:	Senior Director Technology & Innovation Development Office	Title:	CEO, Morphic Rock
Date:	10/7/15	Date:	5 Oct 2015

APPENDIX 1

Patent Rights

Patent Rights under CMCC-2662 “Modified integrin polypeptides, Modified integrin polypeptide dimers, and uses thereof”

1. US Provisional Patent Application 62/033,699 entitled “Modified Integrin Polypeptides, Modified Integrin Polypeptide Dimer, and Uses Thereof”.

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

APPENDIX 2

List of Structure Targets

[***]

APPENDIX 3

Materials

[***]

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

APPENDIX 4
Development Plan

[***]

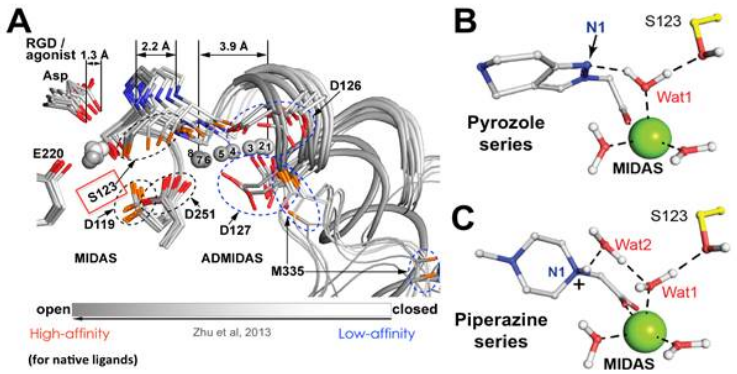

Figure 1. (A) Conformational states of integrin αIIbβ3; the Springer lab discovered 6 intermediate states between the low-affinity closed headpiece (state 1), and high-affinity open headpiece (state 8); full antagonists require binding and stabilization of state 1. (B and C) Structural basis for two full antagonists (pyrazole and piperazine series); full antagonists stabilize, via hydrogen bonds, a metal-coordinating water molecule (Wat1) that is displaced in the earliest steps (state 2-3) in integrin opening (Lin *et al*, unpublished results).

[***]

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

AMENDMENT NUMBER ONE
to the
EXCLUSIVE LICENSE AGREEMENT

This first amendment ("Amendment One") is made and entered into on October 7, 2018 (the "Amendment Effective Date") by and between The Children's Medical Center Corporation, having a principal place of business located at 300 Longwood Avenue, Boston, Massachusetts 02115 ("CMCC"), and Morphic Rock Holding, LLC, a business corporation organized and existing under the laws of the State of Delaware and having a principal place of business located at 35 Gatehouse Drive A2, Waltham, MA 02154 ("Licensee"). CMCC and Licensee may each individually also be referred to herein as a "Party" and collectively referred to as the "Parties".

WHEREAS, CMCC and Licensee entered into that certain Exclusive License Agreement on October 7th, 2015 (the "Agreement");

WHEREAS, pursuant to the Agreement, Licensee has the exclusive first option to negotiate an exclusive commercial license to CMCC's ownership interest in New Patent Rights;

WHEREAS, pursuant to the Agreement, Licensee has an option to negotiate a non-exclusive commercial license to Know-How After Execution;

WHEREAS, the Parties wish to extend the option periods for both the New Patent Rights and the Know-How After Execution in consideration of Licensee's payment of additional annual option fees as set forth in this Amendment One; and

WHEREAS, the Parties desire to amend the Agreement as set forth herein, and the Agreement otherwise remains unchanged.

In consideration of these premises and of the mutual promises set forth below, the Parties agree to amend the Agreement in accordance with this Amendment One as follows:

Amendments to the Agreement:

1. The first sentence of Article II, Paragraph B shall be amended to read in its entirety as follows:

"Option to New Patent Rights. Subject to the terms of this Agreement, CMCC hereby grants to Licensee an exclusive first option for an exclusive commercial license to CMCC's ownership interest in New Patent Rights for a period beginning on the Effective Date and expiring [***] years thereafter, provided that Licensee pays the annual option fee of [***] at the beginning of the [***] year of the option term and [***] at the beginning of the [***] year of the option term whether or not Licensee exercises its option described herein."

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

2. The first sentence of Article II, Paragraph C shall be amended to read in its entirety as follows:

"Option to Know-How After the Execution. Subject to the terms of this Agreement, CMCC hereby grants to Licensee an option for a non-exclusive commercial license to Know-How After Execution for a period beginning on the Effective Date and expiring [***] years thereafter, provided that Licensee pays the annual option fee of [***] at the beginning of the [***] year of the option term and [***] at the beginning of the [***] year of the option term whether or not Licensee exercises its option described herein."

3. Upon execution, this Amendment One shall be made a part of the Agreement and shall be incorporated by reference. Except as provided herein, all other terms and conditions of the Agreement shall remain in full force and effect. Capitalized terms contained in this Amendment One not otherwise defined herein have the meanings set forth in the Agreement.

4. This Amendment One may be executed by facsimile or a portable document format (PDF) and in any number of counterparts, each of which shall be deemed to be an original, and all of which together will constitute one and the same instrument.

IN WITNESS WHEREOF, the Parties have hereunto duly executed this Amendment One by their respective authorized signatories as of the Amendment Effective Date.

THE CHILDREN'S MEDICAL CENTER CORPORATION

By /s/ Irene Abrams

Name & Title: Irene Abrams
Vice President
Technology Development & New Ventures

Date 11/5/2018

MORPHIC ROCK HOLDING, LLC

By /s/Robert Farrell

Name & Title: Robert Farrell Jr.
VP Finance & Treasurer

Date 11/5/2018