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RHYTHM PHARMACEUTICALS, INC. INDEX TO FINANCIAL STATEMENTS

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**As submitted confidentially to the Securities and Exchange Commission on April 6, 2016 as Amendment No. 2 to the confidential submission filing No. 377-01174**

**Registration No. 333-**

# UNITED STATES
# SECURITIES AND EXCHANGE COMMISSION

**Washington, D.C. 20549**

# FORM S-1

**REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933**

# RHYTHM PHARMACEUTICALS, INC.

(Exact name of Registrant as specified in its charter)

| **Delaware** | **2834** | **46-2159271** |
|---|---|---|
| (State or Other Jurisdiction of Incorporation or Organization) | (Primary Standard Industrial Classification Code Number) | (I.R.S. Employer Identification Number) |

**855 Boylston Street**
**11th Floor**
**Boston, MA 02116**
**(857) 264-4280**
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

**Keith M. Gottesdiener, M.D.**
**Chief Executive Officer**
**Rhythm Pharmaceuticals, Inc.**
**855 Boylston Street**

**11th Floor**
**Boston, MA 02116**
**(857) 264-4280**
(Name, address, including zip code, and telephone number, including area code, of agent for service)

**Please send copies of all communications to:**

| **Julio E. Vega** | **Steven D. Singer** |
|---|---|
| **Laurie A. Cerveny** | **Lisa Firenze** |
| **Morgan, Lewis & Bockius LLP** | **Wilmer Cutler Pickering Hale and Dorr LLP** |
| **One Federal Street** | **7 World Trade Center** |
| **Boston, MA 02110** | **New York, NY 10007** |
| **(617) 951-8000** | **(212) 230-8000** |

**Approximate date of commencement of the 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, 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 statement 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. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

| Large accelerated filer o | Accelerated filer o | Non-accelerated filer ☒ (Do not check if a smaller reporting company) | Smaller reporting company 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[(3)] |
|---|---|---|
| Common Stock, $0.001 par value per share | $ | $ |

(1) Includes additional shares of common stock that the underwriters have the option to purchase.

(2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.

(3) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.

**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 , 2016*

*PRELIMINARY PROSPECTUS*

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.


*Shares*

# *Rhythm Pharmaceuticals, Inc.*

*Common Stock*

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***Rhythm Pharmaceuticals, Inc. is offering shares of common stock. This is our initial public offering, and no public market currently exists for our common stock. We anticipate that the initial public offering price will be between $ and $ per share of common stock.***

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***We intend to apply to have the common stock listed on the NASDAQ Global Market under the symbol "RYTM."***

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***We are an "emerging growth company" under the federal securities laws and will be subject to reduced public company reporting requirements. Investing in our common stock involves risks. See "Risk Factors" beginning on page 14.***

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| | ***Per Share*** | ***Total*** |
|---|---|---|
| *Initial Public Offering Price* | *$* | *$* |
| *Underwriting Discount and Commissions*[(1)] | *$* | *$* |
| *Proceeds, before expenses, to us* | *$* | *$* |

*(1) We refer you to "Underwriting" beginning on page 167 for additional information regarding underwriting compensation relating to reimbursement of FINRA-related expenses.*

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*We have granted the underwriters an option for a period of up to 30 days to purchase up to additional shares of common stock.*

*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.*

*The underwriters expect to deliver the shares to purchasers on or about , 2016.*

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*MORGAN STANLEY* *BofA MERRILL LYNCH* *PIPER JAFFRAY*

*NEEDHAM*

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**We 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 and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may provide you. We are offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of the common stock.**

## PROSPECTUS SUMMARY

*This summary highlights 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 included elsewhere in this prospectus. You should also consider, among other things, the matters described under "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," in each case appearing elsewhere in this prospectus. Unless otherwise stated, all references to "us," "our," "RYTM," "we," the "Company" and similar designations refer to Rhythm Pharmaceuticals, Inc. or our predecessor company, as the context may require. See "Corporate Reorganization."*

### Overview

We are a biopharmaceutical company focused on the development and commercialization of peptide therapeutics for the treatment of rare genetic deficiencies that result in life-threatening metabolic disorders. Our lead peptide product candidate is setmelanotide, a potent, first-in-class melanocortin-4 receptor, or MC4R, agonist for the treatment of rare genetic disorders of obesity. We believe setmelanotide, for which we have exclusive worldwide rights, has the potential to serve as replacement therapy for the treatment of melanocortin-4, or MC4, pathway deficiencies. MC4 pathway deficiencies result in the body lacking satiety signals, which, in turn, leads to intense feelings of hunger and to obesity. Our development efforts are initially focused on two of these deficiencies, Prader-Willi Syndrome, or PWS, and pro-opiomelanocortin, or POMC, deficiency obesity, for which there are currently no effective or approved treatments. We believe that the MC4 pathway is a compelling target for treating these genetic disorders because of its critical role in regulating appetite and weight by promoting satiety and weight control, and that peptide therapeutics are uniquely suited for activating this target. We have demonstrated initial proof of concept in our ongoing Phase 2 clinical trial in POMC deficiency obesity, a disorder of extreme and unrelenting appetite and obesity, in which setmelanotide dramatically reduced both weight and hunger. The U.S. Food and Drug Administration, or FDA, has acknowledged the importance of these results by giving our POMC deficiency obesity program a breakthrough therapy designation. We are also conducting a Phase 2 clinical trial in PWS and we expect results from these clinical trials by the third quarter of 2016. These clinical trials expand upon previous setmelanotide clinical trials which enrolled over 200 general obese patients and demonstrated significant weight loss with good tolerability.

Obesity is epidemic in the United States and current treatment approaches have demonstrated limited long-term success for most obese patients. We are taking a different approach to obesity drug development by leveraging new understanding of the genetic causes of severe obesity to develop innovative therapies that we believe have the potential for compelling efficacy. Setmelanotide's unique mechanism of action at MC4R enables a targeted approach to treating very severe obesity in patients with specific, monogenic defects in the MC4 signaling pathway. By restoring impaired function in this pathway, setmelanotide can serve as replacement therapy for genetic deficiencies, with the potential for dramatic improvements in weight and appetite. We believe we are at the forefront of improving treatment outcomes in subtypes of severe obesity that are caused by genetically-defined defects in the MC4 pathway.

***Our Product Pipeline***

The following chart depicts key information regarding the development of our product candidate, setmelanotide, including the indications we are pursuing within MC4 pathway deficiencies, the current state of development and our expected upcoming milestones:


***Setmelanotide for the Treatment of Obesity and Hyperphagia in PWS***

PWS is a life-threatening, orphan disease with prevalence estimates ranging from approximately one in 8,000 to one in 52,000, and with at least 8,000 diagnosed patients in the United States. A hallmark of PWS is severe hyperphagia, an overriding physiological drive to eat, leading to severe obesity and other complications. For PWS patients, hyperphagia and obesity are the greatest threats to their health, and these patients are likely to die prematurely as a result of choking, stomach rupture, or from complications caused by morbid obesity. Only one drug, a growth hormone, is approved for treating short stature in PWS. However, there is currently no approved treatment for the obesity and hyperphagia associated with PWS. Recent scientific studies identify deficiencies affecting the MC4 pathway as the likely cause of the obesity and associated symptoms of PWS, such as hyperphagia, and demonstrate that an MC4R agonist can directly impact these symptoms.

We have initiated a Phase 2 clinical trial to evaluate the effects of up to 10 weeks of treatment on weight reduction and PWS-specific food-related behavior in obese patients with PWS. We expect to enroll approximately 36 patients and report results from this trial by the third quarter of 2016. The FDA's existing guidance on developing products for weight management addresses treatments for the population of general obesity patients, which requires treatment of large and diverse populations of general obese patients. In contrast, based on our consultations with the FDA, we believe we can pursue a faster path to approval of setmelanotide for our genetically-targeted patient populations, such as PWS patients, based on a clinical study program tailored in size, duration, and preclinical prerequisites appropriate for the smaller size and nature of these rare populations.

In September 2015, the FDA granted our orphan drug designation request for setmelanotide for the treatment of PWS. As described more fully under the caption "Business—Regulatory Matters," if a product with orphan drug designation receives the first FDA approval for that disease, the product will receive orphan drug exclusivity. The benefit of orphan drug exclusivity is that the FDA will not approve another sponsor's marketing application for the same drug for the same indication for seven years, except in certain limited circumstances.

***Setmelanotide for the Treatment of Obesity and Hyperphagia in POMC Deficiency***

POMC deficiency obesity is a life-threatening, ultra-rare orphan disease, with approximately 50 patients reported to date. Ultra-rare orphan diseases are generally categorized as those that affect fewer than 20 patients per million. We believe that our addressable patient population for this disorder is approximately 100 to 500 patients worldwide. Like PWS, patients with POMC deficiency have unrelenting hyperphagia that begins in infancy and they develop severe, early onset obesity. POMC deficiency obesity results from two different homozygous genetic defects, both upstream (which refers to the relative position of the defect earlier in the pathway) of MC4R. Currently, there is no approved treatment for the obesity and hyperphagia associated with this genetic disorder.

We have initiated a Phase 2, open-label, clinical trial to evaluate the effects of up to 12 weeks of setmelanotide treatment on weight reduction and hunger in approximately six patients with POMC deficiency obesity. To date, only two patients are enrolled and receiving treatment in this trial. The initial patient in this trial lost 25.8 kg, or 56.9 lbs., over the first 13 weeks of treatment, immediately regained weight on withdrawal of drug, and resumed outstanding weight loss upon re-initiation of setmelanotide treatment in a long-term extension and has lost 51 kgs, or 112 lbs., over 42 weeks. Our second POMC patient has been treated for 18 weeks and has lost 28.8 kgs, or 63.5 lbs. We expect to report results from this trial in the first half of 2016. Based on the FDA's breakthrough therapy designation, we have an expedited path to approval of setmelanotide for POMC deficiency obesity. In April 2016, the FDA granted our orphan drug designation request for setmelanotide for the treatment of POMC deficiency obesity.

In January 2016, the FDA granted breakthrough therapy designation to setmelanotide for the treatment of POMC deficiency obesity. The breakthrough therapy designation program is intended to expedite the development and review of therapeutics for serious or life-threatening conditions where preliminary evidence indicates that the drug may demonstrate a substantial improvement over existing therapies on one or more clinically significant endpoints.

***Setmelanotide for the Treatment of Obesity and Hyperphagia in POMC Heterozygous and LepR Deficiency***

We are also focusing on additional upstream MC4 pathway deficiencies for which setmelanotide can function as replacement therapy and provide activation of the pathway downstream of the defect, promoting satiety and weight control. We intend to expand setmelanotide development to include two other upstream disorders, POMC heterozygous deficiency obesity, where patients only have one normal copy of the MC4 gene, and LepR deficiency obesity, where patients have a defective leptin receptor, for which there is also high unmet need and no approved or effective therapy. POMC heterozygous deficiency obesity results from the loss of function in one of two POMC genes. This condition is more prevalent than POMC deficiency obesity, affecting an estimated 2% of patients with severe, early onset obesity. We estimate that the addressable patient population may consist of approximately 4,000 patients in the United States.

LepR deficiency obesity is an ultra-rare orphan disease resulting in extreme hyperphagia and severe early onset obesity with an estimated prevalence of 1% of subjects with severe, early onset obesity. Like other deficiencies upstream in the MC4 pathway, LepR deficiency results in loss of function in the MC4 pathway. We estimate actual prevalence could be between 500 and 2,000 patients in the United States.

We intend to initiate Phase 2 clinical trials for both POMC heterozygous deficiency obesity and LepR deficiency obesity in the first half of 2016 to evaluate the effects of setmelanotide on hunger and weight in these disorders. We expect to report results from these trials in the first half of 2017. We also intend to pursue faster paths to approval for setmelanotide for both POMC heterozygous deficiency obesity and LepR deficiency obesity.

***Setmelanotide: A First-in-Class Phase 2 MC4R Agonist***

Setmelanotide is a potent, first-in-class, MC4R agonist peptide administered by daily subcutaneous, or SC, injection. Setmelanotide is in Phase 2 clinical trials for the treatment of rare genetic disorders of obesity caused by MC4 pathway deficiencies. MC4R modulates a key pathway in humans that regulates energy homeostasis, which refers to the body's energy balance, and food intake. The critical role of the MC4 pathway in weight regulation was validated with the discovery that single genetic defects in this pathway result in early onset and severe obesity. The first generation MC4R agonists were small molecules that failed primarily due to safety issues, particularly increases in blood pressure, as well as limited efficacy. In contrast, setmelanotide is a peptide that retains the specificity and functionality of the naturally occurring hormone that activates MC4R. Our previous setmelanotide clinical trials have enrolled over 200 general obese patients and demonstrated significant weight loss with good tolerability.

We have initiated two Phase 2 clinical trials of setmelanotide for the treatment of rare genetic disorders of obesity, one for POMC deficiency obesity and one for PWS. Based on FDA consultations to date, we believe we can seek indications for obesity caused by defects in the MC4 pathway with faster paths to approval because of the high unmet need and rare prevalence of these disorders. We expect to use the results of our Phase 2 clinical trials of setmelanotide in these indications as the foundation for proceeding directly to pivotal clinical trials. We also plan to initiate Phase 2 proof of concept trials in the first half of 2016 in POMC heterozygous deficiency obesity patients and in patients with LepR deficiency obesity, additional populations with genetically-defined deficiencies upstream in the MC4 pathway.

We believe our initial data in POMC deficiency obesity provides strong proof of concept that setmelanotide, when targeted for deficiencies in the upstream portion of the MC4 pathway, can provide compelling efficacy for weight loss and decrease in hunger. Proof of concept for substantial weight loss in patients with downstream, heterozygous mutations of the MC4R gene itself has also been achieved in a small, four week, Phase 1b clinical trial. While these downstream defects are not our current area of focus, we believe they provide evidence for still substantial, though lesser weight loss efficacy, in a setting of a partially defective, downstream defect in the MC4 pathway which impacts a significantly larger population.

To date, most of our completed setmelanotide clinical trials have been in the general obese population. These trials have provided additional safety data as we focus on rare, genetic segments of obesity. In these trials, setmelanotide has generally achieved weight loss without adversely increasing blood pressure.

***Company History***

Our predecessor company was founded in November 2008 by former biopharmaceutical executives who have successfully developed, commercialized and in-licensed innovative pharmaceutical products and it commenced active operations in 2010. We subsequently expanded our senior management team to further broaden our team's experience in developing, registering and commercializing new drugs, and appointed our scientific advisory board, or SAB, members who have extensive clinical expertise in obesity, endocrinology and metabolic diseases. We intend to leverage the experience of our senior management team and SAB to develop and commercialize setmelanotide. Through our senior management team's network of industry contacts, we will continue to evaluate additional product candidate licensing and acquisition opportunities. We are backed by strong and dedicated investors that include both private equity venture capital funds and public healthcare investment funds. Our investors include MPM Capital, New Enterprise Associates, Third Rock Ventures, Ipsen, Pfizer Venture Investments, OrbiMed, Deerfield Management and two public healthcare investment funds.

**Our Strategy**

Our goal is to be a leader in developing and commercializing targeted therapies for genetic deficiencies that result in life-threatening metabolic disorders. The key components of our strategy are:

- Rapidly develop setmelanotide for rare genetic disorders of obesity caused by MC4 pathway deficiencies;
- Advance setmelanotide for PWS and POMC deficiency obesity as our first indications in upstream MC4 pathway deficiencies;
- Expand setmelanotide development to additional upstream MC4 pathway deficiencies, including POMC heterozygous deficiency obesity and LepR deficiency obesity;
- Leverage the broad experience of our team in clinical and commercial drug development, and product acquisitions; and
- Commercialize setmelanotide for rare disease indications in core strategic markets.

**Risks Associated with Our Business**

Our business is subject to a number of risks of which you should be aware before making an investment decision. These risks are discussed more fully in the "Risk Factors" section beginning on page 14 of this prospectus. These risks include the following:

- We are a development stage biopharmaceutical company with a limited operating history and have not generated any revenue from product sales. We have incurred significant operating losses since our inception, anticipate that we will incur continued losses for the foreseeable future and may never achieve profitability. As of December 31, 2015, we had an accumulated deficit of $50.7 million.
- Even if this offering is successful, we will need to raise additional funding, 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 efforts or other operations.
- We have only one product candidate and we may not be successful in any future efforts to identify and develop additional product candidates.
- Positive results from early clinical trials of setmelanotide may not be predictive of the results of later clinical trials of setmelanotide. If we cannot generate positive results in our later clinical trials of setmelanotide, we may be unable to successfully develop, obtain regulatory approval for and commercialize setmelanotide.
- The number of patients suffering from each of the MC4 pathway deficiencies is small and has not been established with precision. If the actual number of patients with any of these conditions is smaller than we had estimated, our revenue and ability to achieve profitability will be materially adversely affected.
- Failures or delays in the commencement or completion of our planned clinical trials of setmelanotide could result in increased costs to us and could delay, prevent or limit our ability to generate revenue and continue our business.
- Changes in regulatory requirements, FDA guidance or unanticipated events during our clinical trials of setmelanotide may occur, which may result in changes to clinical trial protocols or additional clinical trial requirements, which could result in increased costs to us and could delay our development timeline. Additionally, it may be necessary to validate different or additional instruments for measuring subjective symptoms, and to show that setmelanotide has a clinically meaningful impact on those endpoints in order to obtain regulatory approval.

- Even if we complete the necessary clinical trials, the regulatory and marketing approval process is expensive, time consuming and uncertain and may prevent us from obtaining approvals for the commercialization of our product candidate. We depend almost entirely on the success of setmelanotide, which is still in Phase 2 clinical development. We cannot be certain that we will be able to obtain regulatory approval for, or successfully commercialize setmelanotide. If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals, we will not be able to commercialize setmelanotide and our ability to generate revenue will be materially impaired.

- If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

- Our product candidate may cause undesirable side effects that could delay or prevent its regulatory approval, limit the commercial profile of an approved labeling or result in significant negative consequences following marketing approval, if any.

- Even if approved, reimbursement policies could limit our ability to sell setmelanotide.

- Competing products and technologies could emerge, adversely affecting our opportunity to generate revenue from the sale of setmelanotide.

- If we are unable to obtain and maintain patent protection for our product candidate and technology, or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and products similar or identical to ours, and our ability to successfully commercialize our technology and product candidate may be impaired.

- Our management could be distracted from their responsibilities to us as a result of the consulting services they provide to the Relamorelin Company, which may present conflicts, or the appearance of conflicts, with us.

- Since we have not operated as an independent company in the past, we may incur unforeseen expenses associated with doing so.

**Corporate Reorganization and Other Information**

We are a Delaware corporation organized in February 2013 under the name Rhythm Metabolic, Inc. Prior to our organization and the Corporate Reorganization referred to below, we were part of Rhythm Pharmaceuticals, Inc., a Delaware corporation which was organized in November 2008 and which commenced active operations in 2010. We refer to this corporation as the Predecessor Company.

In March 2013, the Predecessor Company underwent a corporate reorganization, which we refer to as the Corporate Reorganization, pursuant to which all of the outstanding equity securities of the Predecessor Company were exchanged for units of Rhythm Holding Company, LLC, a newly-organized limited liability company, which we refer to as the LLC entity. After the consummation of this exchange and as part of the Corporate Reorganization, the Predecessor Company contributed setmelanotide and the MC4R agonist program to us and distributed to the LLC entity all of the then issued and outstanding shares of our stock. The result of the Corporate Reorganization was that we and the Predecessor Company became wholly-owned subsidiaries of the LLC entity and the two product candidates and related programs that were originally held by the Predecessor Company were separated, with relamorelin and the ghrelin agonist program being retained by the Predecessor Company and setmelanotide and the MC4R agonist program being held by us. We refer to the Predecessor Company after consummation of the Corporate Reorganization as the Relamorelin Company. The Predecessor Company filed the IND for setmelanotide in October 2011 and conducted the setmelanotide clinical trials up until the Corporate Reorganization, after which all clinical trials have been conducted by us.

In August 2015, we effected a 93,500-for-1 forward stock split of our then-outstanding common stock. Also in August 2015 and December 2015, we sold 25,000,000 shares and 15,000,000 shares, respectively of our series A preferred stock to certain investors. Following the stock split and the closing of our series A preferred stock financings, the LLC entity remained our largest stockholder, with the balance of our stock being owned by our series A investors. Prior to consummation of this offering, the LLC entity will distribute its shares of our common stock to its members, which shares we anticipate will be exchanged by some of its members for newly-authorized shares of our series A-1 and series A-2 junior preferred stock, convertible into our common stock on a one-to-one basis upon the closing of this offering. We refer to this distribution and exchange as the Distribution.

On October 13, 2015, the Relamorelin Company changed its name to Motus Therapeutics, Inc. and we changed our name to Rhythm Pharmaceuticals, Inc.

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Our principal executive offices are located at 855 Boylston Street, 11th Floor, Boston, MA 02116, and our telephone number is (857) 264-4280. Our corporate website address is www.rhythmtx.com. Information contained on or accessible through our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only.

This prospectus contains references to our trademarks and to trademarks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus, including logos, artwork and other visual displays, may appear without the ® or ™ symbols, but such 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 rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

**Implications of Being an Emerging Growth Company**

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenue of at least $1.0 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th, and (2) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period. We refer to the Jumpstart Our Business Startups Act of 2012 in this prospectus as the "JOBS Act," and references in this prospectus to "emerging growth company" shall have the meaning ascribed to it in the 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:

- the ability 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;
- an exemption from the requirements to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended;
- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements; and
- exemptions from the requirement to hold a nonbinding advisory vote on executive compensation and to obtain stockholder approval of any golden parachute payments not previously approved.

We may use these provisions until such time as we cease to be an emerging growth company.

We have elected to take advantage of certain of the reduced disclosure obligations in the registration statement of which this prospectus forms 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 from the information that 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. We have irrevocably elected not to avail ourselves of this exemption and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

## THE OFFERING

| | |
|---|---|
| Common stock offered by us | shares |
| Common stock to be outstanding after this offering | shares |
| Option to purchase additional common stock offered by us | shares |
| Use of proceeds | We estimate that our net proceeds from this offering will be approximately $ million at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds from this offering, together with our existing cash resources, as follows:<br>• approximately $ million to fund the manufacturing and development of setmelanotide through completion of our Phase 3 registration studies for the treatment of PWS;<br>• approximately $ million for the manufacturing and development of setmelanotide through completion of our Phase 3 registration studies for the treatment of POMC deficiency obesity; and<br>• the remainder for working capital purposes and other general corporate purposes. |
| Risk factors | See "Risk Factors" beginning on page 14 and the other information included in this prospectus for a discussion of factors you should carefully consider before deciding to invest in our common stock. |
| Proposed NASDAQ Global Market Symbol | "RYTM" |

The number of shares of our common stock to be outstanding after this offering is based on shares of our common stock outstanding as of March 31, 2016 and assumes:

- a for reverse stock split of our common stock, to be effective immediately prior to the effectiveness of the registration statement of which this prospectus forms a part;
- the Distribution and the conversion of all of our outstanding preferred stock into shares of our common stock upon the completion of this offering;
- no exercise by the underwriters of their option to purchase additional shares of common stock; and
- the filing of our amended and restated certificate of incorporation upon the closing of this offering.

In this prospectus, unless otherwise indicated, the number of shares of common stock outstanding and the other information based thereon does not reflect:

- shares of common stock reserved for future issuance under our amended and restated 2015 equity incentive plan, or the Plan;

- shares of common stock reserved for future issuance under our 2016 employee stock purchase plan; and
- shares of common stock issuable upon the exercise of stock options outstanding as of under the Plan at a weighted average exercise price of $ .

## SUMMARY FINANCIAL DATA

The following summary financial data for the years ended December 31, 2014 and 2015 are derived from our audited financial statements included elsewhere in this prospectus. You should read this data together with our audited financial statements and related notes included elsewhere in this prospectus and the information under the captions "Selected Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations." Our historical results are not necessarily indicative of our future results.

Our financial statements for the periods presented include allocations of costs from certain shared functions provided to us by the Relamorelin Company. These allocations were made based on either a specific identification basis or, when a specific identification is not practicable, a proportional cost allocation method which allocates expenses based on the percentage of employee time and research and development efforts expended on our business as compared to total employee time and research and development efforts, and have been included in our financial statements for the periods presented.

The financial statements included in this prospectus may not necessarily reflect our financial position, results of operations and cash flows as if we had operated as an independent company during all of the periods presented. See "Corporate Reorganization."

| | Year Ended December 31, 2014 | Year Ended December 31 2015 |
|---|---|---|
| | (in thousands, except share and per share data) | |
| Operating expenses: | | |
| Research and development | $ 5,280 | $ 7,148 |
| General and administrative | 1,213 | 3,425 |
| Total operating expenses | 6,493 | 10,573 |
| Loss from operations | (6,493) | (10,573) |
| Other income (expense): | | |
| Revaluation of Series A Investor Right/Obligation | — | (500) |
| Total other income (expense): | — | (500) |
| Net loss and comprehensive loss | $ (6,493) | $ (11,073) |
| Net loss attributable to common stockholders | $ (6,493) | $ (12,000) |
| Net loss attributable to common stockholders per common share, basic and diluted[(1)] | $ (0.07) | $ (0.13) |
| Weighted average common shares outstanding, basic and diluted | 93,500,000 | 93,500,000 |
| Pro forma net loss attributable to common stockholders per common share, basic and diluted (unaudited)[(1)] | $ (0.07) | $ (0.11) |
| Pro forma weighted average common shares outstanding, basic and diluted (unaudited) [(1)] | 93,500,000 | 105,038,462 |

| | As of December 31, 2015 | | |
|---|---|---|---|
| | Actual | Pro Forma(2) | Pro Forma As Adjusted(3) |
| | (unaudited in thousands) | | |
| **Balance Sheet Data:** | | | |
| Cash and cash equivalents | $ 34,869 | | |
| Working capital | 30,218 | | |
| Total assets | 37,275 | | |
| Convertible preferred stock | 40,000 | | |
| Accumulated deficit | (50,671) | | |
| Total stockholders' equity (deficit) | $ (7,999) | | |

(1) See Notes 2 and 6 within the notes to our financial statements appearing elsewhere in this prospectus for a description of the methods used to calculate basic and diluted net loss per share and pro forma basic and diluted net loss per share.

(2) Pro forma to reflect the issuance of shares of series A-1 junior preferred stock and shares of series A-2 junior preferred stock in connection with the Distribution and the conversion of all of our outstanding preferred stock into shares of common stock upon the closing of this offering.

(3) Pro forma as adjusted to further reflect the issuance and sale of shares of our common stock in this offering, at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

## CORPORATE REORGANIZATION

We are a Delaware corporation organized in February 2013 under the name Rhythm Metabolic, Inc. Prior to our organization and the Corporate Reorganization referred to below, we were part of Rhythm Pharmaceuticals, Inc., a Delaware corporation which was organized in November 2008 and which commenced active operations in 2010. We refer to this corporation as the Predecessor Company.

In March 2013, the Predecessor Company underwent a corporate reorganization, which we refer to as the Corporate Reorganization, pursuant to which all of the outstanding equity securities of the Predecessor Company were exchanged for units of Rhythm Holding Company, LLC, a newly-organized limited liability company, which we refer to as the LLC entity. After the consummation of this exchange and as part of the Corporate Reorganization, the Predecessor Company contributed setmelanotide and the MC4R agonist program to us and distributed to the LLC entity all of the then issued and outstanding shares of our stock. The result of the Corporate Reorganization was that we and the Predecessor Company became wholly-owned subsidiaries of the LLC entity and the two product candidates and related programs that were originally held by the Predecessor Company were separated, with relamorelin and the ghrelin agonist program being retained by the Predecessor Company and setmelanotide and the MC4R agonist program being held by us. We refer to the Predecessor Company after consummation of the Corporate Reorganization as the Relamorelin Company. The Predecessor Company filed the IND for setmelanotide in October 2011 and conducted the setmelanotide clinical trials up until the Corporate Reorganization, after which all clinical trials have been conducted by us.

In October 2014, the LLC entity granted to Actavis plc, now owned by Allergan, Inc., an exclusive option to acquire the Relamorelin Company. The transaction was limited to the acquisition of the Relamorelin Company and did not include us.

In August 2015, we effected a 93,500-for-1 forward stock split of our then-outstanding common stock. Also in August 2015 and December 2015, we sold 25,000,000 shares and 15,000,000 shares, respectively, of our series A preferred stock to certain investors. Following the stock split and the closing of our series A preferred stock financings, the LLC entity remained our largest stockholder, with the balance of our stock being owned by our series A investors. Prior to consummation of this offering, the LLC entity will distribute its shares of our common stock to its members, which shares we anticipate will be exchanged by some of its members for newly-authorized shares of our series A-1 and series A-2 junior preferred stock, convertible into our common stock on a one-to-one basis upon the closing of this offering. We refer to this distribution and exchange as the Distribution.

We have an Amended and Restated Payroll Services Agreement with the Relamorelin Company, which we refer to as the Payroll Services Agreement. Pursuant to the Payroll Services Agreement, the Relamorelin Company provides us certain employee and consultant services. We have no employees, rather services are provided to us by the employees of the Relamorelin Company pursuant to this agreement. We share certain costs with the Relamorelin Company, including finance, accounting, research and development and operations. Following the Distribution and prior to consummation of this offering, these employees will become our employees and will enter into employment agreements with us and will continue to provide services to the Relamorelin Company in a consulting capacity. Following consummation of this offering, we may continue to share some services with the Relamorelin Company, as may be deemed appropriate by our management.

On October 13, 2015, the Relamorelin Company changed its name to Motus Therapeutics, Inc. and we changed our name to Rhythm Pharmaceuticals, Inc.

## RISK FACTORS

*Investing in our common stock involves a high degree of risk. You should carefully consider the following risks and uncertainties, together with all other information in this prospectus, including our financial statements and related notes, before investing in our common stock. Any of the risk factors we describe below could adversely affect our business, financial condition or results of operations. The market price of our common stock could decline if one or more of these risks or uncertainties actually occur, causing you to lose all or part of the money you paid to buy our common stock. Additional risks that we currently do not know about or that we currently believe to be immaterial may also impair our business. Certain statements below are forward-looking statements. See "Cautionary Note Regarding Forward-Looking Statements" in this prospectus.*

### Risks Related to Our Financial Position and Need for Capital

***We are a development stage biopharmaceutical company with a limited operating history and have not generated any revenue from product sales. We have incurred significant operating losses since our inception, anticipate that we will incur continued losses for the foreseeable future and may never achieve profitability.***

We are a development stage company with a limited operating history on which to base your investment decision. Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. We were incorporated in February 2013 in connection with the Corporate Reorganization. Our operations to date have been limited primarily to acquiring rights to intellectual property, business planning, raising capital, developing our technology, identifying potential product candidates, undertaking preclinical studies and conducting research and development activities for our product candidate, setmelanotide. We have never generated any revenue from product sales. We have not obtained any regulatory approvals for our product candidate.

Since our inception, we have focused substantially all of our efforts and financial resources on the research and development of setmelanotide, which is currently in Phase 2 clinical development. We have funded our operations to date primarily through capital contributions from the Predecessor Company, the Relamorelin Company and the LLC entity and proceeds from sales of preferred stock and have incurred losses in each year since our inception. Our net loss and comprehensive losses were $6.5 million for the year ended December 31, 2014, and $11.1 million for the year ended December 31, 2015. As of December 31, 2015, we had an accumulated deficit of $50.7 million. Substantially all of our operating losses have resulted from costs incurred in connection with our development program and from general and administrative costs associated with our operations. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders' deficit and working capital. We expect our research and development expenses to significantly increase in connection with our additional clinical trials of setmelanotide and development of any other product candidates we may choose to pursue. In addition, if we obtain marketing approval for setmelanotide, we will incur significant sales, marketing and outsourced manufacturing expenses. Once we are a public company, we will incur additional costs associated with operating as a public company. As a result, we expect to continue to incur significant and increasing operating losses for the foreseeable future. Because of the numerous risks and uncertainties associated with developing pharmaceutical products, we are unable to predict the extent of any future losses or when we will become profitable, if at all. Even if we do become profitable, we may not be able to sustain or increase our profitability on a quarterly or annual basis.

Our ability to become profitable depends upon our ability to generate revenue. To date, we have not generated any revenue from our product candidate, and we do not know when, or if, we will generate any revenue. We do not expect to generate significant revenue unless and until we obtain marketing approval for, and begin to sell, setmelanotide. Our ability to generate revenue depends on a number of factors, including, but not limited to, our ability to:

- initiate and successfully complete later-stage clinical trials that meet their clinical endpoints;

- initiate and successfully complete all safety studies required to obtain U.S. and foreign marketing approval for setmelanotide as a treatment for obesity caused by genetic deficiencies affecting the MC4 pathway;
- successfully manufacture or contract with others to manufacture our product candidate;
- commercialize setmelanotide, if approved, by building a sales force or entering into collaborations with third parties; and
- achieve market acceptance of setmelanotide in the medical community and with third-party payors.

Absent our entering into a collaboration or partnership agreement, we expect to incur significant sales and marketing costs as we prepare to commercialize setmelanotide. Even if we initiate and successfully complete our pivotal clinical trials and setmelanotide is approved for commercial sale, and we incur the costs associated with these activities, setmelanotide may not be a commercially successful drug. We may not achieve profitability soon after generating product sales, if ever. If we are unable to generate product revenue, we will not become profitable and will be unable to continue operations without continued funding.

***Even if this offering is successful, we will need to raise additional funding, 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 efforts or other operations.***

We are currently advancing setmelanotide through clinical development. Developing peptide therapeutic products is expensive, and we expect our research and development expenses to increase substantially in connection with our ongoing activities, particularly as we advance our product candidate in clinical trials. We intend to use the proceeds of this offering primarily for the clinical development and regulatory approval of setmelanotide. Depending on the status of regulatory approval and, if approved, commercialization of setmelanotide, as well as the progress we make in the sale of setmelanotide, we may require additional capital to fund the continued development of setmelanotide and our operating needs thereafter. We may also need to raise additional funds if we choose to pursue additional indications and/or geographies for setmelanotide or otherwise expand more rapidly than we presently anticipate.

As of December 31, 2015, our cash and cash equivalents were approximately $34.9 million. We have received capital contributions from the Predecessor Company, the Relamorelin Company and the LLC entity from time to time as needed. In August 2015 and December 2015, we raised aggregate gross proceeds of $25.0 million and $15.0 million, respectively, through our issuance of series A preferred stock. We estimate that the net proceeds from this offering will be approximately $ million, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and offering expenses payable by us. We expect that the net proceeds from this offering, together with our existing cash and cash equivalents, will be sufficient to fund our operating expenses through at least the end of 2018. However, our operating plan may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings, government or other third-party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements, or a combination of these approaches. We will also require additional capital to obtain regulatory approval for, and to commercialize, our product candidate. Raising funds in the current economic environment may present additional challenges. Even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital if market conditions are favorable or if we have specific strategic considerations.

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidate. In addition, we cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us,

if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, and may cause the market price of our shares to decline. The sale of additional equity or convertible securities would dilute all of our stockholders. The incurrence of indebtedness would result in increased fixed payment obligations and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights, and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborative partners or other third parties at an earlier stage than otherwise would be desirable and we may be required to relinquish rights to our product candidate or technologies or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects.

If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay or discontinue one or more of our research or development programs or the commercialization of our product candidate or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially adversely affect our business, financial condition and results of operations.

***Our very limited operating history may make it difficult for you to evaluate the success of our business to date and to assess our future viability.***

We are an early stage company. The Predecessor Company commenced active operations in February 2010, and we were incorporated as a separate company in February 2013. Our operations to date have been limited primarily to acquiring rights to intellectual property, business planning, raising capital, developing our technology, identifying potential product candidates, undertaking preclinical studies and, beginning in November 2010, conducting clinical trials. We have not yet demonstrated our ability to successfully complete a pivotal Phase 3 clinical trial, obtain marketing approvals, manufacture at commercial scale, or arrange for a third party to do so on our behalf or conduct sales, marketing and distribution activities necessary for successful product commercialization. Consequently, any predictions made about our future success or viability may not be as accurate as they could be if we had a longer operating history.

In addition, as a new business, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors. We will need to transition at some point from a company with a research and development focus to a company capable of supporting commercial activities and we may not be successful in such a transition.

We expect our financial condition and operating results to continue to fluctuate significantly from quarter-to-quarter and year-to-year due to a variety of factors, many of which are beyond our control. Accordingly, you should not rely upon the results of any quarterly or annual periods as indications of future operating performance.

***Our historical and pro forma financial information is not necessarily representative of the results we would have achieved as an independent company, and may not be a reliable indicator of our future results.***

We have historically operated as a subsidiary of the LLC entity. The Relamorelin Company has assisted us by providing certain corporate functions pursuant to the Payroll Services Agreement. Following consummation of this offering, we may continue to share some services with the Relamorelin Company, as may be deemed appropriate by our management. See "Corporate Reorganization."

The historical financial and pro forma financial information we have included in this prospectus may not reflect what our results of operations, financial position and cash flows would have been had we been an independent company during the periods presented. This is primarily because:

- our historical financial information reflects allocations for services historically provided to us by the Predecessor Company and the Relamorelin Company, which allocations may not reflect the costs we will incur for similar services in the future as an independent company; and

- our historical financial information does not reflect changes that we expect to incur in the future as a result of operating as an independent company and from reduced economies of scale, including changes in cost structure, personnel needs, financing and operations of our business.

In addition, the pro forma financial information included in this prospectus is based on the best information available, which in part includes a number of estimates and assumptions which may prove to be inaccurate. Accordingly, our pro forma financial information should not be assumed to be indicated of what our financial condition or results of operations actually would have been as an independent company, nor to be a reliable indicator of what our financial condition or results of operations may actually be in the future. See "Management's Discussion and Analysis of Financial Condition and Results of Operations."

**Risks Related to the Development of Our Product Candidate**

***Positive results from early clinical trials of setmelanotide may not be predictive of the results of later clinical trials of setmelanotide. If we cannot generate positive results in our later clinical trials of setmelanotide, we may be unable to successfully develop, obtain regulatory approval for, and commercialize setmelanotide.***

Positive results from any of our Phase 1 and Phase 2 clinical trials of setmelanotide may not be predictive of the results of later clinical trials. The duration of effect of setmelanotide has only been studied for durations less than the expected duration of our pivotal Phase 3 clinical trials, and consequently there may be safety or efficacy issues in longer trials. It is possible that the effects seen in shorter term clinical trials will not be replicated at later time points or in larger clinical trials. For our POMC deficiency obesity studies, the number of patients studied is small, adding additional uncertainty. In addition, not all of our trials demonstrated statistically significant weight loss. There may be additional reasons why our early clinical trials are not predictive of later clinical trials including the limited patient populations of our target indications. Where such a small number of patients are available to study, even a single serious adverse event or poor efficacy outcome could have disappropriate effects in the viability of our program. We may also need to develop a genetic diagnostic test to help identify patients with genetic deficiencies affecting the MC4 pathway, a process that can be lengthy and cause additional delays in completing our clinical trials and present obstacles to obtaining approval. The FDA may require approval or clearance of a genetic diagnostic test, or the availability of a laboratory developed test, at the same time that the FDA approves the therapeutic product. Should the FDA determine in our case that a genetic diagnostic test for diagnosing patients for our therapies is needed, we may face significant delays or obstacles in obtaining approval of a new drug application, or NDA, for our product candidate.

Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in later-stage clinical trials after achieving positive results in early-stage development, and we cannot be certain that we will not face similar setbacks. These setbacks have been caused by, among other things, pre-clinical findings made while clinical trials were underway or safety or efficacy observations made in clinical trials, including previously unreported adverse events. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical trials nonetheless failed to obtain FDA approval. If we fail to produce positive results in our planned Phase 3 clinical trials of setmelanotide, the development timeline and regulatory approval and commercialization prospects for our product candidate, and, correspondingly, our business and financial prospects, would be materially adversely affected.

***The number of patients suffering from each of the MC4 pathway deficiencies we are targeting is small and has not been established with precision. If the actual number of patients with any of these conditions is smaller than we estimate or if any approval that we obtain is based on a narrower definition of these patient populations, our revenue and ability to achieve profitability may be materially adversely affected.***

Due to the rarity of some of our target indications, with the exception of the PWS Association patient registry, there is no available comprehensive patient registry or other method of establishing with precision the actual number of patients with MC4 pathway genetic defects. As a result, we have had to rely on other available sources to derive prevalence estimates for our target indications. Since the published epidemiology studies for these disorders are based on relatively small population samples, and are not amenable to robust statistical analyses, it is possible that these projections may exceed the addressable population, particularly given the need to genotype patients to definitively confirm a diagnosis.

We have estimated the potential addressable patient populations with these disorders based on the following sources and assumptions:

- *Prader-Willi Syndrome*. The prevalence rates for PWS reported by published epidemiological studies in the United States and Europe vary, with estimates ranging from one in 8,000 to one in 52,000. We believe that there is an addressable population of approximately 8,000 patients in the United States, based on these epidemiological studies and supported by the number of patients that are currently registered with the PWS Association.

- *POMC Deficiency Obesity.* There are approximately 50 patients with POMC deficiency obesity noted in a series of published case reports, each mostly reporting a single or small number of patients. However, we believe our addressable patient population for this disorder is approximately 100 to 500 patients worldwide, as most of the reported cases are from a small number of academic research centers, and because genetic testing for POMC deficiency is often unavailable and rarely performed. Based on discussion with experts in rare diseases, we also believe the number of diagnosed cases will increase several-fold with increased awareness of this disorder and the availability of new treatments.

- *POMC Heterozygous Deficiency Obesity and LepR Deficiency Obesity.* Our addressable patient population estimate for POMC heterozygous deficiency obesity is approximately 4,000 patients in the United States, and for LepR deficiency obesity is approximately 500 to 2,000 patients in the United States. These estimates are based on:

  - epidemiology studies on POMC heterozygous deficiency and LepR deficiency in small cohorts of patients comprised of children with severe obesity and adults with severe obesity who have a history of early onset obesity;

  - United States Census Bureau figures for adults and children, and Centers for Disease Control and Prevention, or CDC, prevalence numbers for severe adult obese patients (BMI>40 $kg/m^2$) and for severe early onset obese children ($99^{th}$ percentile at ages 2 to 17 years old);

  - with wider availability of genetic testing expected for POMC heterozygous deficiency and LepR deficiency and increased awareness of new treatments, our belief that up to 40% of patients with these disorders may eventually be diagnosed.

  Using these sources and assumptions, we calculated our estimates for addressable populations by multiplying (x) the estimated prevalence from epidemiology studies of approximately 2% for POMC heterozygous and 1% for LepR deficiency, (y) our estimate of the number of patients comprised of children with severe obesity and our estimate of a projected number of adults with severe obesity who have a history of early onset obesity and (z) our estimated diagnosis rate of up to 40%.

We are conducting additional epidemiology studies to strengthen these prevalence projections. In parallel, we are also developing a patient registry for diagnosed patients with POMC deficiency and LepR deficiency which will further inform prevalence projections for these rare genetic orders.

If the actual number of patients with any of the MC4 pathway deficiencies we are targeting is lower than we believe, it may be difficult to recruit patients, and this may affect the timelines for the completion of clinical trials. In addition, if any approval that we obtain is based on a narrower definition of these patient populations than we had anticipated, then the potential market for setmelanotide for these indications will be smaller than we originally believed. In either case, a smaller patient population in our target indications would have a materially adverse effect on our ability to achieve commercialization and generate revenues.

***Failures or delays in the commencement or completion of our planned clinical trials of setmelanotide could result in increased costs to us and could delay, prevent or limit our ability to generate revenue and continue our business.***

We commenced Phase 2 clinical trials for setmelanotide in 2015, which are ongoing, and we plan to commence additional Phase 2 clinical trials in 2016. We hope to initiate our first Phase 3 clinical trial in 2017. Successful initiation and completion of such clinical trials is a prerequisite to submitting an NDA to the FDA and, consequently, the ultimate approval and commercial marketing of setmelanotide. We do not know whether our planned additional Phase 2 or Phase 3 clinical trials will begin or whether any of our clinical trials will be completed on schedule, if at all, as the commencement and completion of clinical trials can be delayed or prevented for a number of reasons, including:

- the FDA may deny permission to proceed with our planned Phase 2 or Phase 3 clinical trials or any other clinical trials we may initiate, or may place a clinical trial on hold;
- delays in filing or receiving approvals or additional investigational new drug application, or IND, that may be required;
- negative results from our ongoing and planned preclinical studies, or the FDA requiring additional preclinical studies;
- delays in commencing additional necessary preclinical studies, including carcinogenicity and juvenile toxicology studies;
- delays in reaching or failing to reach agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- inadequate quantity or quality of our product candidate or other materials necessary to conduct clinical trials, including delays in the manufacturing of sufficient supply of finished drug product;
- difficulties obtaining Institutional Review Board, or IRB, and/or ethics committee approval to conduct a clinical trial at a prospective site or sites;
- challenges in recruiting and enrolling patients to participate in clinical trials, including the size and nature of the patient population, the proximity of patients to clinical trial sites, eligibility criteria for the clinical trial, the nature of the clinical trial protocol, the availability of approved effective treatments for the relevant disease and competition from other clinical trial programs for similar indications;
- severe or unexpected drug-related side effects experienced by patients in a clinical trial, including side effects previously identified in our completed clinical trials;
- delays in validating the Patient Reported Outcome, or PRO, or the Observer Reported Outcome, or ORO, questionnaire for measuring subjective symptoms, which are likely to be a key endpoint in clinical trials;

- delays in validating any measures of hunger and related endpoints that may be utilized in a clinical trial, including delays caused by the need to translate the PRO and ORO or other measures of hunger into languages other than English;
- delays in validating and, if necessary, obtaining approval for any needed genetic diagnostic tests, for example, to identify patients with MC4 pathway deficiencies;
- delays in identifying and recruiting patients with any of the genetic causes of obesity in indications that we are targeting;
- the FDA or other regulatory agencies may disagree with our clinical trial designs, which may cause delays in initiating our clinical trials, or may disagree with our interpretation of data from clinical trials or change the requirements for approval even after it has reviewed and commented on the design for our clinical trials;
- uncertainty related to the length of placebo-controlled intervals in clinical trials;
- the need to perform non-inferiority trials, which can be larger, longer and more costly, if treatment is approved for similar indications;
- potential delays in the initiation of our clinical trials of LepR due to the fact that we have not yet had discussions with the FDA regarding clinical trials for LepR and, accordingly, do not know if the FDA will disagree with our clinical trial design;
- POMC heterozygous deficiency may have additional challenges, including that the FDA may require that we show that setmelanotide works better in these patients than in the genetically normal population; other challenges associated with these patients may include additional delays in initiating clinical trials for this indication due to uncertainty about the subset of these patients who will respond effectively to setmelanotide and the lack of discussion for this indication with the FDA;
- reports from preclinical or clinical testing of other weight loss therapies may raise safety or efficacy concerns; and
- difficulties retaining patients who have enrolled in a clinical trial but may be prone to withdraw due to rigors of the clinical trial, lack of efficacy, side-effects, personal issues or loss of interest.

Clinical trials may also be delayed or terminated as a result of ambiguous or negative interim results. In addition, a clinical trial may be suspended or terminated by us, the FDA, the IRBs at the sites where the IRBs are overseeing a clinical trial, a data and safety monitoring board, or DSMB, or Safety Monitoring Committee, or SMC, overseeing the clinical trial at issue or other regulatory authorities due to a number of factors, including, among others:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical trial protocols;
- inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities that reveals deficiencies or violations that require us to undertake corrective action, including the imposition of a clinical hold;
- unforeseen safety issues, adverse side effects or lack of effectiveness;
- changes in government regulations or administrative actions;
- problems with clinical trial supply materials; and
- lack of adequate funding to continue the clinical trial.

***Changes in regulatory requirements, FDA guidance or unanticipated events during our clinical trials of setmelanotide may occur, which may result in changes to clinical trial protocols or additional clinical trial requirements, which could result in increased costs to us and could delay our development timeline. Additionally, it may be necessary to validate different or additional instruments for measuring subjective symptoms, and to show that setmelanotide has a clinically meaningful impact on those endpoints in order to obtain regulatory approval.***

Changes in regulatory requirements, FDA guidance or unanticipated events during our clinical trials may force us to amend clinical trial protocols or the FDA may impose additional clinical trial requirements. For instance, the FDA issued draft guidance on developing products for weight management in February 2007. In March 2012, the FDA's Endocrinologic and Metabolic Drugs Advisory Committee met to discuss possible changes to how the FDA evaluates the cardiovascular safety of weight-management drugs, and the FDA may require additional studies to support registration. In addition, the FDA is considering broader applicability of requirements for cardiovascular outcomes trials, or CVOTs, presenting the possibility of cardiovascular risk pre-approval, including for obesity products. While we believe these will not be required for rare genetic populations of obesity, any of these activities could result in additional clinical requirements for setmelanotide, increase our costs or delay approval of setmelanotide.

Amendments to our clinical trial protocols would require resubmission to the FDA and IRBs for review and approval, which may adversely impact the cost, timing or successful completion of a clinical trial. If we experience delays completing, or if we terminate, any of our clinical trials, or if we are required to conduct additional clinical trials, the commercial prospects for setmelanotide may be harmed and our ability to generate product revenue will be delayed.

In addition, prior to commencing a Phase 3 clinical trial for setmelanotide, we plan to validate and seek FDA concurrence with, or at least substantial input on the PRO and ORO questionnaires for measuring subjective endpoints aimed at measuring changes in hunger and/or food-seeking behavior and compulsions. A PRO is a measurement based on a report that comes from the patient about the status of a patient's health condition, without amendment or interpretation of the patient's response by a clinician or anyone else. An ORO is a measurement based on an observation by someone other than the patient or a health professional, such as a parent, spouse or other non-clinical caregiver who is in a position to regularly observe and report on a specific aspect of the patient's health. In our Phase 3 clinical trial for setmelanotide, we plan to measure setmelanotide's ability to mitigate hyperphagia, the overriding physiological drive to eat, through PRO and ORO questionnaires. The questionnaires are designed to elicit feedback from patients on how well setmelanotide decreases their hunger, and from their family members or caregivers on setmelanotide's effect on the patients' food-seeking behavior.

To our knowledge, no sponsor of an approved drug has yet used PRO or ORO questionnaires to generate data on hyperphagia-mitigating endpoints. Because we may be relying on clinical endpoints that have not previously been the subject of prior FDA approvals, there is a risk that the FDA or other regulatory authorities, may not consider the endpoints to provide evidence of clinically meaningful results or that results may be difficult for the FDA to interpret. If we experience delays in validation or do not receive agreement with our proposed PRO and ORO questionnaires based on the conceptual framework, content validity, reliability, other measures of validity, and ability to detect changes, we may not be able to proceed with Phase 3 clinical trials, and ultimately may not be able to obtain approval to market any of our products.

***If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.***

Our target patient populations are small. We may not be able to initiate or continue clinical trials for setmelanotide or other product candidates that we may in the future develop if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. The pediatric population is an important patient population for our product candidate and it may be even more challenging to commence studies in this

population, and to locate and enroll pediatric patients. In addition, some of our competitors have ongoing clinical trials for product candidates that treat the same indications as setmelanotide, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates.

Patient enrollment is affected by other factors including:

- the severity of the disease under investigation;
- the eligibility criteria for the clinical trial in question;
- the perceived risks and benefits of the product candidate under study;
- the success of efforts to facilitate timely enrollment in clinical trials;
- the patient referral practices of physicians;
- the ability to monitor patients adequately during and after treatment; and
- the proximity and availability of clinical trial sites for prospective patients.

Our inability to enroll a sufficient number of patients for our clinical trials would result in significant delays, could require us to abandon one or more clinical trials altogether and could delay or prevent our receipt of necessary regulatory approvals. Enrollment delays in our clinical trials may result in increased development costs for our product candidate, which would cause the value of our company to decline and limit our ability to obtain additional financing.

***Our product candidate may cause undesirable side effects that could delay or prevent regulatory approval, limit the commercial profile of an approved labeling, or result in significant negative consequences following marketing approval, if any.***

First generation MC4R agonists were predominantly small molecules that failed in clinical trials due to significant safety issues, particularly increases in blood pressure, and had limited efficacy. Undesirable side effects caused by our product candidate could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive labeling or the delay or denial of regulatory approval by the FDA or other regulatory authorities.

Setmelanotide is an MC4R agonist. Potential side effects of MC4R agonism, which have been noted either with setmelanotide or with other MC4R agonists in clinical trials and preclinical studies, may include:

- adverse effects on cardiovascular parameters, such as increases in heart rate and blood pressure;
- erections in males and similar effects in women, such as sexual arousal, clitoral swelling and hypersensitivity;
- nausea and vomiting;
- reduced appetite;
- effects on mood, depression, anxiety and other psychiatric manifestations; and
- other effects, specifically back pain, headaches, fatigue, diarrhea and joint pain, that have been seen numerically more frequently in setmelanotide-treated patients as compared with placebo patients.

Injection site reactions have been seen in SC injections with setmelanotide. In addition, setmelanotide has likely off-target effects on the closely related MC1 receptor, which mediates tanning in response to sun exposure. Other MC1 mediated effects include darkening of skin blemishes, such as freckles and moles. These effects have generally been reversible in clinical trials, but it is still unknown if they will be reversible with long-term exposure. The MC1 mediated effects may also carry risks. The long-term impact of MC1 activation has not been tested in clinical trials, and could potentially include increases in skin cancer, excess

biopsy procedures and cosmetic blemishes. These skin changes may also result in unblinding, which could make interpretation of clinical trial results more complex and possibly subject to bias.

The safety data we have disclosed to date represents our interpretation of the data at the time of disclosure and they are subject to our further review and analysis. The only serious adverse event, or SAE, possibly attributed to setmelanotide in our clinical trials was one report of atypical chest pain seen in our Phase 2 clinical trial with once daily SC injection, although there was no evidence of any serious respiratory or cardiac cause on careful examination. In addition, our interpretation of the safety data from our clinical trials is contingent upon the review and ultimate approval of the FDA or other regulatory authorities. The FDA or other regulatory authorities may not agree with our methods of analysis or our interpretation of the results. The long term effects of setmelanotide have not been tested in our clinical trials.

Further, if setmelanotide receives marketing approval and we or others identify undesirable side effects caused by the product (or any other similar product) before or after the approval, a number of potentially significant negative consequences could result, including:

- regulatory authorities may request that we withdraw the product from the market or may limit their approval of the product through labeling or other means;
- regulatory authorities may require the addition of labeling statements, such as a "boxed" warning or a contraindication;
- the FDA and other regulatory authorities may require the addition of a Risk Evaluation and Mitigation Strategy, or REMS, due to the need to limit treatment to rare patient populations, or to safety concerns;
- we may be required to change the way the product is distributed or administered, conduct additional clinical trials or change the labeling of the product;
- we may decide to remove the product from the marketplace;
- we could be sued and held liable for injury caused to individuals exposed to or taking the product; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of our product candidate and could substantially increase the costs of commercializing our product candidate and significantly impact our ability to successfully commercialize our product candidate and generate revenues.

***Although we have been granted orphan drug designation for setmelanotide in treating PWS and POMC deficiency obesity, we may be unable to obtain orphan drug designation for other uses or to obtain exclusivity in any use. If our competitors are able to obtain orphan drug exclusivity for products that constitute the same drug and treat the same indications as our product candidate, we may not be able to have competing products approved by the applicable regulatory authority for a significant period of time.***

The FDA may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act of 1983, or the Orphan Drug Act, the FDA may designate a product candidate as an orphan drug if it is intended to treat a rare disease or condition, which is defined under the Federal Food, Drug and Cosmetic Act, or FDCA, as having 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.

Generally, if a product candidate with an orphan drug designation receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of seven years of marketing exclusivity, which precludes the FDA from approving another marketing application for a product that constitutes the same drug treating the same indication for that marketing exclusivity period,

except in limited circumstances. If another sponsor receives such approval before we do (even where we have orphan drug designation for that use), we will be precluded from receiving marketing approval for our product for that use for the exclusivity period of seven years. The exclusivity period in the United States can be extended by six months if the NDA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. Orphan drug exclusivity may be revoked if the FDA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the product to meet the needs of patients with the rare disease or condition.

Although we have been granted orphan drug designation for setmelanotide in treating PWS and POMC deficiency obesity, if we request orphan drug designation for setmelanotide for other uses, there can be no assurances that the FDA will grant such designation. For example, if the population of patients who would be appropriate candidates for a drug is 200,000 or more individuals, the drug may not qualify for orphan drug designation, even if the population for which the sponsor seeks approval is lower than 200,000. Additionally, the designation of setmelanotide as an orphan product does not guarantee that the FDA will accelerate regulatory review of, or ultimately approve, that product candidate, nor does it limit the ability of the FDA to grant orphan drug designation to product candidates of other companies that treat the same indications as setmelanotide prior to our product receiving exclusive marketing approval.

Even if we obtain orphan drug exclusivity for setmelanotide, that exclusivity may not effectively protect our product candidate from competition because different drugs can be approved for the same condition. In the United States, even after an orphan drug is approved, the FDA may subsequently approve another drug for the same condition if the FDA concludes that the latter drug is not the same drug or is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care.

***Although we have obtained breakthrough therapy designation for setmelanotide for the treatment of POMC deficiency obesity, the FDA may rescind the breakthrough designation and we may be unable to obtain breakthrough therapy designation for other uses. In addition, breakthrough therapy designation by the FDA may not lead to a faster development, regulatory review or approval process, and it does not increase the likelihood that our product candidate will receive marketing approval in the United States.***

Under the Food and Drug Administration Safety and Innovation Act, or FDASIA, the FDA is authorized to give certain products "breakthrough therapy designation." A breakthrough therapy product candidate is defined as a product candidate that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that such product candidate may demonstrate substantial improvement on one or more clinically significant endpoints over existing therapies. The FDA will seek to ensure the sponsor of a breakthrough therapy product candidate receives intensive guidance on an efficient drug development program, intensive involvement of senior managers and experienced staff on a proactive, collaborative and cross-disciplinary review and a rolling review process whereby the FDA may consider reviewing portions of an NDA before the sponsor submits the complete application. Product candidates designated as breakthrough therapies by the FDA may be eligible for other expedited programs, such as priority review, if supported by clinical data.

Designation as a breakthrough therapy is within the discretion of the FDA. Accordingly, even if we believe setmelanotide meets the criteria for designation as a breakthrough therapy for other uses, the FDA may disagree. In any event, the receipt of a breakthrough therapy designation for a product candidate, or acceptance for one or more of the FDA's other expedited programs, may not result in a faster development process, review or approval compared to products considered for approval under conventional FDA procedures and does not guarantee ultimate approval by the FDA. Additionally, the FDA may later decide that the product candidate no longer meets the conditions for designation and may withdraw designation at any time or decide that the time period for FDA review or approval will not be shortened.

***We may not be able to translate the current formulations of our product candidate for methods of delivery that would be acceptable to the FDA or commercially successful.***

Setmelanotide is currently administered by SC injection using small insulin-type needles. SC injection is generally less well-received by patients than other methods of administration, such as oral administration. Considerable additional resources and efforts may be necessary in order to translate the current formulations of setmelanotide into forms that will be acceptable to the FDA and/or to patients. We have entered into a license agreement with Camurus AB, or Camurus, for the use of Camurus' drug delivery technology, FluidCrystal, to formulate setmelanotide. While we plan to utilize this formulation, or to develop new and useful formulations of setmelanotide, we cannot estimate the probability of success, nor the resources and time needed to succeed. If we are unable to utilize this formulation, or to develop new formulations, setmelanotide may not achieve significant market acceptance and our business, financial condition and results of operations may be materially harmed.

***Our approach to treating patients with MC4 pathway genetic deficiencies requires the identification of patients with unique genetic subtypes (for example, POMC genetic deficiency). This may require the development of genetic diagnostic tests that require substantial financial resources and regulatory approval. This testing may be a barrier to approval or to patients using our products and may raise ethical, legal and social issues related to the use of genetic information.***

We intend to focus our development of setmelanotide as a treatment for obesity caused by certain genetic deficiencies affecting the MC4 pathway. For some genetic deficiencies affecting this pathway, for example PWS, no specific genetic diagnostic testing is expected to be required prior to initiation of therapy with setmelanotide. For other MC4 pathway deficiencies, this approach requires genetic diagnostic testing, identification, and recruitment of patients, which may require substantial financial resources as well as regulatory approvals for these genetic diagnostic tests. The development of these tests to accompany a clinical program can be difficult, and may delay our current timelines, or even prevent approval altogether. In addition, our estimates of the prevalence and incidence of these genetic deficiencies are based primarily on rates reported in scientific publications, and it is uncertain if these rates will be confirmed as subjects are screened for clinical trials. If these rates are lower than reported, recruitment and screening would be more costly and require additional time.

In order to assist in identifying this subset of patients, a genetic diagnostic test, which is a test or measurement that evaluates the presence of genetic variants in a patient, could be used. We anticipate that the development of a genetic diagnostic test concurrently with our product candidate will help us more accurately identify the patients who belong to the target subset. Use of a genetic diagnostic test in this way during clinical trials will result in product labeling, if the product candidate is approved, that limits use to only those patients who express the genetic variants identified by the genetic diagnostic test. We may need to rely on third-party collaborators to successfully develop and commercialize a genetic diagnostic test. If approved, this test may be subject to reimbursement limitations that could limit access to treatment. Finally, patients may have concerns about the collection and use of their genetic information which may limit adoption of testing.

We may be subject to regulation by the FDA, the Centers for Medicare and Medicaid Services, or CMS, and comparable foreign regulatory authorities, regarding the use of genetic diagnostic tests to identify patients with unique genetic subtypes, such as POMC genetic deficiency, who will be responsive to our products. We believe that if such tests are necessary, existing and available genetic diagnostic tests developed and administered by laboratories certified under the Clinical Laboratory Improvement Amendments, or CLIA, are sufficient to select appropriate patients and will be permitted by the FDA. Such tests are known as laboratory developed tests, or LDTs. For future product candidates, however, it could be necessary to develop *in vitro* diagnostic devices, which the FDA refers to as *in vitro* companion diagnostic devices, that provide information that is essential for the safe and effective use of the corresponding therapeutic product, and that require FDA clearance or approval. We may be dependent on

the sustained cooperation and effort of any third-party collaborators with whom we may partner in the future to develop LDTs or even *in vitro* companion diagnostic devices. We and our potential future collaborators may encounter difficulties in developing such tests, including issues relating to the selectivity and/or specificity of the diagnostic, analytical validation, reproducibility or clinical validation. Any delay or failure by us or our potential future collaborators to develop or obtain regulatory clearance or approval of such tests, if necessary, could delay or prevent approval of our product candidate.

***We have only one product candidate and we may not be successful in any future efforts to identify and develop additional product candidates.***

We have only one product candidate and may seek to identify and develop additional product candidates, both within and outside of our current area of expertise. If so, the success of our business may depend primarily on our ability to identify, develop and commercialize these products. Research programs to identify new product candidates require substantial technical, financial and human resources. We 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. We may focus our efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful. In addition, any such efforts could adversely impact our continued development and commercialization of setmelanotide.

If any of these events occur, we may be forced to abandon some or all of our development efforts for a program or programs, which would have a material adverse effect on our business and could potentially cause us to cease operations.

**Risks Related to the Commercialization of Our Product Candidate**

***Even if approved, reimbursement policies could limit our ability to sell setmelanotide.***

Market acceptance and sales of setmelanotide will depend on reimbursement policies and may be affected by healthcare reform measures. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels for those medications. Cost containment is a primary concern in the U.S. healthcare industry and elsewhere. Government authorities and these third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. We cannot be sure that reimbursement will be available for setmelanotide and, if reimbursement is available, the level of such reimbursement. Reimbursement may impact the demand for, or the price of setmelanotide. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize setmelanotide.

In some foreign countries, particularly in Canada and European countries, the pricing of prescription pharmaceuticals is subject to strict governmental control. In these countries, pricing negotiations with governmental authorities can take six to 12 months or longer after the receipt of regulatory approval and product launch. To obtain favorable reimbursement for the indications sought or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of setmelanotide with other available therapies. If reimbursement for setmelanotide is unavailable in any country in which we seek reimbursement, if it is limited in scope or amount, if it is conditioned upon our completion of additional clinical trials or if pricing is set at unsatisfactory levels, our operating results could be materially adversely affected.

***If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell setmelanotide, if approved, we may not be able to generate any revenue.***

We do not currently have infrastructure in place for the sale, marketing or distribution of pharmaceutical products. In order to market setmelanotide, if approved by the FDA or any other regulatory body, we must build our sales, marketing, managerial and other non-technical capabilities or make arrangements with third parties to perform these services. If we are unable to establish adequate sales, marketing and distribution capabilities, whether independently or with third parties, or if we are unable to do so on commercially reasonable terms, our business, results of operations, financial condition and prospects would be materially adversely affected.

***Even if we receive marketing approval for setmelanotide in the United States, we may never receive regulatory approval to market setmelanotide outside of the United States.***

We intend to pursue marketing approval for setmelanotide in the European Union and in other countries worldwide. In order to market any product outside of the United States, we must establish and comply with the numerous and varying safety, efficacy and other regulatory requirements of other countries. Approval procedures vary among countries and can involve additional product candidate testing and additional administrative review periods. The time required to obtain approvals in other countries might differ from that required to obtain FDA approval. The marketing approval processes in other countries may implicate all of the risks detailed above regarding FDA approval in the United States as well as other risks. In particular, in many countries outside of the United States, products must receive pricing and reimbursement approval before the product can be commercialized. Obtaining this approval can result in substantial delays in bringing products to market in such countries. Marketing approval in one country does not ensure marketing approval in another, but a failure or delay in obtaining marketing approval in one country may have a negative effect on the regulatory process or commercial activities in others. Failure to obtain marketing approval in other countries or any delay or other setback in obtaining such approval would impair our ability to market setmelanotide in such foreign markets. Any such impairment would reduce the size of our potential market share and could have a material adverse impact on our business, results of operations and prospects.

***Even if we receive marketing approval for setmelanotide, we may not achieve market acceptance, which would limit the revenue that we generate from the sale of setmelanotide.***

The commercial success of setmelanotide, if approved by the FDA or other applicable regulatory authorities, will also depend upon the awareness and acceptance of setmelanotide within the medical community, including physicians, patients and third-party payors. If setmelanotide is approved but does not achieve an adequate level of acceptance by patients, physicians and third-party payors, we may not generate sufficient revenue to become or remain profitable. Before granting reimbursement approval, third-party payors may require us to demonstrate that, in addition to treating obesity caused by certain genetic deficiencies affecting the MC4 pathway, setmelanotide also provides incremental health benefits to patients. Our efforts to educate the medical community and third-party payors about the benefits of setmelanotide may require significant resources and may never be successful. With the exception of PWS, which is more routinely identified, genetic diagnostic screening for deficiencies affecting the MC4 pathway is not routine. There is currently no readily available and approved genetic diagnostic test, nor are there guidelines to support genetic diagnostic screening. In addition, third-party payors may not reimburse patients for genetic diagnostic screening for deficiencies affecting the MC4 pathway. Broad acceptance of setmelanotide depends in part on the ability to identify and diagnose patients with these genetic defects, which may prove challenging. All of these challenges may impact our ability to ever successfully market and sell setmelanotide.

Market acceptance of setmelanotide, if approved, will depend on a number of factors, including, among others:

- setmelanotide's ability to treat obesity caused by certain genetic deficiencies affecting the MC4 pathway and, if required by any applicable regulatory authority in connection with the approval for these indications, to provide patients with incremental health benefits, as compared with other available treatments, therapies, devices or surgeries;
- the relative convenience and ease of SC injections as the necessary method of administration of setmelanotide, including as compared with other treatments for obese patients;
- the prevalence and severity of any adverse side effects associated with setmelanotide;
- limitations or warnings contained in the labeling approved, as well as the existence of a REMS, for setmelanotide by the FDA;
- availability of alternative treatments, including a number of obesity therapies already approved or expected to be commercially launched in the near future;
- the size of the target patient population, and the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support and timing of market introduction of competitive products;
- publicity concerning setmelanotide or competing products and treatments;
- pricing and cost effectiveness;
- the effectiveness of our sales and marketing strategies;
- our ability to increase awareness of setmelanotide through marketing efforts;
- our ability to obtain sufficient third-party coverage or reimbursement;
- the willingness of patients to pay out-of-pocket in the absence of third-party coverage; and
- the likelihood that the FDA may require development of a REMS as a condition of approval or post-approval, may not agree with our proposed REMS or may impose additional requirements that limit the promotion, advertising, distribution or sales of setmelanotide.

***Our industry is intensely competitive. If we are not able to compete effectively against current and future competitors, we may not be able to generate revenue from the sale of setmelanotide, our business will not grow and our financial condition and operations will suffer.***

The biotechnology and pharmaceutical industries are intensely competitive and subject to rapid and significant technological change. We have competitors in a number of jurisdictions, many of which have substantially greater name recognition, commercial infrastructures and financial, technical and personnel resources than we have. Established competitors may invest heavily to quickly discover and develop compounds that could make setmelanotide obsolete or uneconomical. Any new product that competes with an approved product may need to demonstrate compelling advantages in efficacy, convenience, tolerability and safety to be commercially successful. Other competitive factors, including generic competition, could force us to lower prices or could result in reduced sales. In addition, new products developed by others could emerge as competitors to setmelanotide. If we are not able to compete effectively against our current and future competitors, our business will not grow and our financial condition and operations will suffer.

There are no currently approved pharmacological treatments for regulating hunger and hyperphagia-related behaviors of patients with PWS, POMC deficiency obesity, POMC heterozygous deficiency obesity or LepR deficiency obesity. Bariatric surgery is contraindicated in patients with PWS, and the severe

obesity and hyperphagia associated with these other genetic disorders of obesity are also considered to be risk factors for bariatric surgery. We are aware that Zafgen, Inc. is conducting a clinical trial in PWS with beloranib, a MetAP2 inhibitor thought to affect the metabolism of fat. However, on December 2, 2015, Zafgen announced that the beloranib IND application had been placed on complete clinical hold. We are also aware of a clinical trial that was recently completed by Ferring Pharmaceuticals, Inc. to evaluate the use of carbetocin, an analogue of a brain peptide hormone oxytocin hypothesized to increase trust, reduce anxiety and improve behavior in patients with PWS. We also are aware of a clinical trial being conducted by Essentialis, Inc. to evaluate the safety and tolerability of controlled-release diazoxide in patients with PWS and to explore the effects of diazoxide on hyperphagia-related behaviors and energy expenditure. In addition, in August 2015, Novo Nordisk announced it will initiate a Phase 3 clinical trial of Saxenda (liraglutide injection) for weight management in pediatric PWS patients. Also, Alize Pharma recently started a Phase 2 clinical trial in PWS of AZP-531, its unacylated ghrelin analog.

***We face potential product liability exposure, and, if claims are brought against us, we may incur substantial liability.***

The use of setmelanotide in clinical trials and the sale of setmelanotide, if approved, exposes us to the risk of product liability claims. Product liability claims might be brought against us by patients, healthcare providers or others selling or otherwise coming into contact with setmelanotide. For example, we may be sued if any product we develop allegedly causes injury or is found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design or a failure to warn of dangers inherent in the product, including as a result of interactions with alcohol or other drugs, negligence, strict liability and a breach of warranties. Claims could also be asserted under state consumer protection laws. If we become subject to product liability claims and cannot successfully defend ourselves against them, we could incur substantial liabilities. In addition, regardless of merit or eventual outcome, product liability claims may result in, among other things:

- withdrawal of patients from our clinical trials;
- substantial monetary awards to patients or other claimants;
- decreased demand for setmelanotide or any future product candidates following marketing approval, if obtained;
- damage to our reputation and exposure to adverse publicity;
- litigation costs;
- distraction of management's attention from our primary business;
- loss of revenue; and
- the inability to successfully commercialize setmelanotide or any future product candidates, if approved.

The LLC entity maintains product liability insurance coverage for our clinical trials with a $10.0 million annual aggregate coverage limit. We intend to obtain similar product liability insurance coverage as an independent company. Our insurance coverage may be insufficient to reimburse us for any expenses or losses we may suffer. Moreover, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses, including if insurance coverage becomes increasingly expensive. If and when we obtain marketing approval for setmelanotide, we intend to expand our insurance coverage to include the sale of commercial products. However, we may not be able to obtain this product liability insurance on commercially reasonable terms. Large judgments have been awarded in class action lawsuits based on drugs that had unanticipated side effects. The cost of any product liability litigation or other proceedings, even if resolved in our favor, could be substantial, particularly in light of the size of our business and financial resources. A product liability claim or series of claims brought against us could cause our stock price to decline and, if we are unsuccessful in defending

such a claim or claims and the resulting judgments exceed our insurance coverage, our financial condition, business and prospects could be materially adversely affected.

**Risks Related to Our Dependence on Third Parties**

***We rely, and expect that we will continue to rely, on third parties to conduct clinical trials for setmelanotide. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize setmelanotide and our business could be substantially harmed.***

We enter into agreements with third-party CROs to provide monitors for and to manage data for our ongoing clinical trials. We rely heavily on these parties for the execution of clinical trials for setmelanotide and control only certain aspects of their activities. As a result, we have less direct control over the conduct, timing and completion of these clinical trials and the management of data developed through the clinical trials than would be the case if we were relying entirely upon our own staff. Communicating with outside parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities. However, we remain responsible for the conduct of these trials and are subject to enforcement which may include civil and criminal liabilities for any violations of FDA rules and regulations during the conduct of our clinical trials. Outside parties may:

- have staffing difficulties;
- fail to comply with contractual obligations;
- devote inadequate resources to our clinical trials;
- experience regulatory compliance issues;
- undergo changes in priorities or become financially distressed; or
- form relationships with other entities, some of which may be our competitors.

These factors may materially adversely affect the willingness or ability of third parties to conduct our clinical trials and may subject us to unexpected cost increases that are beyond our control. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on CROs does not relieve us of our regulatory responsibilities. We and our CROs are required to comply with current Good Clinical Practices, or cGCPs, which are guidelines enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area and comparable foreign regulatory authorities for any products in clinical development. The FDA enforces these regulations and cGCP guidelines through periodic inspections of clinical trial sponsors, principal investigators and trial sites. If we or our CROs fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, the FDA will determine that any of our clinical trials comply with cGCPs. In addition, our clinical trials must be conducted with products produced under current Good Manufacturing Practices, or cGMPs. Our failure or the failure of our CROs to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process and could also subject us to enforcement action up to and including civil and criminal penalties.

If any of our relationships with these third-party CROs terminate, we may not be able to enter into arrangements with alternative CROs. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain are compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other reasons, any such clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for, or successfully commercialize, setmelanotide. As a result, our financial results and the commercial prospects for setmelanotide in the subject indication would be harmed, our costs could increase and our ability to generate revenue could be delayed.

***We rely completely on third-party suppliers to manufacture our clinical drug supplies of setmelanotide, and we intend to rely on third parties to produce commercial supplies of setmelanotide and preclinical, clinical and commercial supplies of any future product candidate.***

We do not currently have, nor do we plan to acquire, the infrastructure or capability to internally manufacture our clinical drug supply of setmelanotide, or any future product candidates, for use in the conduct of our preclinical studies and clinical trials, and we lack the internal resources and the capability to manufacture any product candidate on a clinical or commercial scale. The facilities used by our contract manufacturing organizations, or CMOs, to manufacture the active pharmaceutical ingredient, or API, and final drug product must pass inspection by the FDA and other comparable foreign regulatory agencies pursuant to inspections that would be conducted after we submit our NDAs or relevant foreign regulatory submission to the applicable regulatory agency. In addition, our clinical trials must be conducted with products produced under cGMP regulations. Our failure or the failure of our CROs or CMOs to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process and could also subject us to enforcement action, including civil and criminal penalties.

We currently contract with a third party for the manufacture of setmelanotide and intend to continue to do so in the future. We have entered into a process development and manufacturing services agreement with Peptisyntha SA, or Peptisyntha, under which Peptisyntha will provide certain process development and manufacturing services in connection with the manufacture of setmelanotide. Under our agreement, we pay Peptisyntha for services in accordance with the terms of mutually agreed upon work orders, which we and Peptisyntha may enter into from time to time. The agreement also provides that, subject to certain conditions, for a period following each product launch date, we will source from Peptisyntha a portion of our requirements for that product being sourced from non-affiliate third parties. We may need to engage additional third-party suppliers to manufacture our clinical drug supplies. We cannot be certain that we can engage third-party suppliers on terms as favorable as those that are currently in place.

We do not control the manufacturing process of, and are completely dependent on, our CMOs to comply with cGMPs for manufacture of both API and finished drug product. If our CMOs cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or applicable foreign regulatory agencies, they will not be able maintain a satisfactory manufacturing history. In addition, although we have no direct control over our CMOs' ability to maintain adequate quality control, quality assurance and qualified personnel, we are ultimately responsible for ensuring that our drug substances and finished product are manufactured in accordance with cGMPs. Furthermore, all of our CMOs are engaged with other companies to supply and/or manufacture materials or products for such companies, which exposes our manufacturers to regulatory risks for the production of such materials and products. As a result, failure to satisfy the regulatory requirements for the production of those materials and products may affect the regulatory clearance of our CMOs' facilities generally. If the FDA or an applicable foreign regulatory agency does not approve these facilities for the manufacture of our product candidate or if it withdraws its approval in the future, we may need to find alternative manufacturing facilities, which would adversely impact our ability to develop, obtain regulatory approval for or market setmelanotide.

We are currently in the process of manufacturing finished drug product for use in our upcoming clinical trials. We believe we currently have a sufficient amount of finished setmelanotide, diluent and placebo to complete our planned clinical trials. However, these projections could change based on delays encountered with manufacturing activities, equipment scheduling and material lead times. Any such delays in the manufacturing of finished drug product could delay our planned clinical trials of setmelanotide, which could delay, prevent or limit our ability to generate revenue and continue our business.

We do not have long-term supply agreements in place with our contractors, and each batch of setmelanotide is individually contracted under a quality and supply agreement. If we engage new contractors, such contractors must be approved by the FDA and other applicable foreign regulatory agencies. We will need to submit information to the FDA and other regulatory authorities describing the

manufacturing changes. If manufacturing changes occur post-approval, the FDA will have to approve these changes. We plan to continue to rely upon CMOs and, potentially, collaboration partners to manufacture commercial quantities of setmelanotide, if approved. Our current scale of manufacturing appears adequate to support all of our current needs for clinical trial supplies for setmelanotide. If setmelanotide is approved, we will need to identify CMOs or partners to produce setmelanotide on a larger scale.

***Any disputes that arise between us and the LLC entity, the Relamorelin Company and/or the Predecessor Company with respect to our past and ongoing relationships could harm our business operations.***

Disputes may arise among the LLC entity, the Relamorelin Company and/or the Predecessor Company and us in a number of areas relating to our past and ongoing relationships, including:

- intellectual property, technology and business matters, including failure to make required technology transfers;
- labor, tax, employee benefit, indemnification and other matters arising from our separation from the LLC entity, the Relamorelin Company or the Predecessor Company;
- employee retention and recruiting;
- business combinations involving us;
- the nature, quality and pricing of transitional services the LLC entity, the Relamorelin Company or the Predecessor Company has agreed to provide us; and
- business opportunities that may be attractive to the LLC entity or the Relamorelin Company and us.

We may not be able to resolve any potential conflicts, and even if we do, the resolution may be less favorable than if we were dealing with an unaffiliated party.

**Risks Related to Our Intellectual Property Rights**

***If we are unable to adequately protect our proprietary technology or maintain issued patents that are sufficient to protect setmelanotide, others could compete against us more directly, which would have a material adverse impact on our business, results of operations, financial condition and prospects.***

Our commercial success will depend in part on our success in obtaining and maintaining issued patents and other intellectual property rights in the United States and elsewhere and protecting our proprietary technology. If we do not adequately protect our intellectual property and proprietary technology, competitors may be able to use our technologies and erode or negate any competitive advantage we may have, which could harm our business and ability to achieve profitability.

We cannot provide any assurances that any of our patents have, or that any of our pending patent applications that mature into issued patents will include, claims with a scope sufficient to protect setmelanotide. Other parties have developed technologies that may be related or competitive to our approach, and may have filed or may file patent applications and may have received or may receive patents that may overlap or conflict with our patent applications, either by claiming the same methods or formulations or by claiming subject matter that could dominate our patent position. The patent positions of biotechnology and pharmaceutical companies, including our patent position, involve complex legal and factual questions, and, therefore, the issuance, scope, validity and enforceability of any patent claims that we may obtain cannot be predicted with certainty.

Although an issued patent is presumed valid and enforceable, its issuance is not conclusive as to its validity or its enforceability and such patent may not provide us with adequate proprietary protection or competitive advantages against competitors with similar products. Patents, if issued, may be challenged, deemed unenforceable, invalidated or circumvented. U.S. patents and patent applications may also be subject to interference proceedings, *ex parte* reexamination, *inter partes* review proceedings, post-grant

review proceedings, supplemental examination and challenges in district court. Patents may be subjected to opposition or comparable proceedings lodged in various foreign, both national and regional, patent offices. These proceedings could result in either loss of the patent or denial of the patent application or loss or reduction in the scope of one or more of the claims of the patent or patent application. In addition, such proceedings may be costly. Thus, any patents that we may own or exclusively license may not provide any protection against competitors. Furthermore, an adverse decision in an interference proceeding can result in a third party receiving the patent right sought by us, which in turn could affect our ability to develop, market or otherwise commercialize setmelanotide.

Competitors may also be able to design around our patents. Other parties may develop and obtain patent protection for more effective technologies, designs or methods. The laws of some foreign countries do not protect our proprietary rights to the same extent as the laws of the United States, and we may encounter significant problems in protecting our proprietary rights in these countries. If these developments were to occur, they could have a material adverse effect on our sales.

In addition, proceedings to enforce or defend our patents could put our patents at risk of being invalidated, held unenforceable or interpreted narrowly. Such proceedings could also provoke third parties to assert claims against us, including that some or all of the claims in one or more of our patents are invalid or otherwise unenforceable. If any of our patents covering setmelanotide are invalidated or found unenforceable, our financial position and results of operations would be materially and adversely impacted. In addition, if a court found that valid, enforceable patents held by third parties covered setmelanotide, our financial position and results of operations would also be materially and adversely impacted.

The degree of future protection for our proprietary rights is uncertain, and we cannot ensure that:

- any of our patents, or any of our pending patent applications, if issued, will include claims having a scope sufficient to protect setmelanotide;
- any of our pending patent applications will issue as patents;
- we will be able to successfully commercialize setmelanotide, if approved, before our relevant patents expire;
- we were the first to make the inventions covered by each of our patents and pending patent applications;
- we were the first to file patent applications for these inventions;
- others will not develop similar or alternative technologies that do not infringe our patents;
- any of our patents will be found to ultimately be valid and enforceable;
- any patents issued to us will provide a basis for an exclusive market for our commercially viable products, will provide us with any competitive advantages or will not be challenged by third parties;
- we will develop additional proprietary technologies or product candidates that are separately patentable; or
- our commercial activities or products will not infringe upon the patents of others.

We rely upon unpatented trade secrets, unpatented know-how and continuing technological innovation to develop and maintain our competitive position, which we seek to protect, in part, by confidentiality agreements with employees, consultants, collaborators and vendors. We also have agreements with employees and selected consultants that obligate them to assign their inventions to us. It is possible that technology relevant to our business will be independently developed by a person who is not a party to such an agreement. We may not be able to prevent the unauthorized disclosure or use of our technical knowledge or trade secrets by consultants, collaborators, vendors, former employees and current employees. Furthermore, if the parties to our confidentiality agreements breach or violate the terms of these agreements, we may not have adequate remedies for any such breach or violation, and we could lose our trade secrets through such breaches or violations. Further, our trade secrets could otherwise become known or be independently discovered by our competitors.

***We may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time-consuming and unsuccessful.***

Competitors may infringe our patents or the patents of our licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming and divert the attention of our management and key personnel from our business operations. Even if we prevail in any lawsuits that we initiate, the damages or other remedies awarded may not be commercially meaningful. In addition, in an infringement proceeding, a court may decide that a patent of ours or our licensors is not valid, is unenforceable and/or is not infringed, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Interference proceedings provoked by third parties or brought by us may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. 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. Our defense of litigation or interference proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. We may not be able to prevent, alone or with our licensors, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States.

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.

***We may infringe the intellectual property rights of others, which may prevent or delay our product development efforts and stop us from commercializing or increase the costs of commercializing setmelanotide, if approved.***

Our success will depend in part on our ability to operate without infringing the intellectual property and proprietary rights of third parties. We cannot assure you that our business, products and methods do not or will not infringe the patents or other intellectual property rights of third parties. For example, numerous third-party U.S. and non-U.S. patents and pending applications exist that cover melanocortin receptor analogs and methods of using these analogs.

The pharmaceutical industry is characterized by extensive litigation regarding patents and other intellectual property rights. Other parties may allege that setmelanotide or the use of our technologies infringes patent claims or other intellectual property rights held by them or that we are employing their proprietary technology without authorization. For example, we received a letter in early 2013 from a third party bringing to our attention several patents and patent applications, both U.S. and non-U.S. We cannot assure you that the holder of these third-party patents will not attempt to assert these patents against us.

Patent and other types of intellectual property litigation can involve complex factual and legal questions, and their outcome is uncertain. Any claim relating to intellectual property infringement that is successfully asserted against us may require us to pay substantial damages, including treble damages and attorney's fees if we are found to be willfully infringing another party's patents, for past use of the asserted intellectual property and royalties and other consideration going forward if we are forced to take a license. In addition, if any such claim were successfully asserted against us and we could not obtain such a license, we may be forced to stop or delay developing, manufacturing, selling or otherwise commercializing setmelanotide.

If we are unable to avoid infringing the patent rights of others, we may be required to seek a license, defend an infringement action or challenge the validity of the patents in court, or redesign our products. Patent litigation is costly and time consuming. We may not have sufficient resources to bring these actions to a successful conclusion.

In addition, in order to avoid infringing the intellectual property rights of third parties and any resulting intellectual property litigation or claims, we could be forced to do one or more of the following, which may not be possible and, even if possible, could be costly and time-consuming:

- cease development and commercialization of setmelanotide;
- pay substantial damages for past use of the asserted intellectual property;
- obtain a license from the holder of the asserted intellectual property, which license may not be available on reasonable terms, if at all; and
- in the case of trademark claims, rename our setmelanotide product candidate.

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

***We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.***

We may also be subject to claims that former employees, collaborators or other third parties have an ownership interest in our patents or other intellectual property. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, such intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

***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.***

The U.S. Patent and Trademark Office, or U.S. PTO, and various foreign governmental patent agencies require compliance with a 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.

***Issued patents covering setmelanotide could be found invalid or unenforceable if challenged in court.***

If we or one of our licensing partners threatened or initiated legal proceedings against a third party to enforce a patent covering setmelanotide, the defendant could claim that the patent covering setmelanotide is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge include alleged failures to meet any one of several statutory requirements, including novelty, non-obviousness and enablement. Grounds for unenforceability assertions include allegations that someone connected with prosecution of the patent withheld material information from the U.S. PTO, or made a misleading statement, during patent prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, *inter partes* review, post grant review and equivalent proceedings in foreign jurisdictions, for example, opposition proceedings. Such proceedings could result in revocation or amendment of our

patents in such a way that they no longer cover our product candidate or competitive products. The outcome following legal assertions of invalidity and/or unenforceability is unpredictable. With respect to validity, 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 and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on setmelanotide. Such a loss of patent protection would have a material adverse impact on our business.

***We do not seek to protect our intellectual property rights in all jurisdictions throughout the world and we may not be able to adequately enforce our intellectual property rights even in the jurisdictions where we seek protection.***

Filing, prosecuting and defending patents on setmelanotide in all countries and jurisdictions throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States could be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our product and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biopharmaceuticals, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. For example, an April 2014 report from the Office of the United States Trade Representative identified a number of countries, including India and China, where challenges to the procurement and enforcement of patent rights have been reported. Several countries, including India and China, have been listed in the report every year since 1989. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

***We are dependent on licensed intellectual property. If we were to lose our rights to licensed intellectual property, we may not be able to continue developing or commercializing setmelanotide, if approved.***

We have licensed our rights to setmelanotide from Ipsen Pharma SAS, or Ipsen. Our license with Ipsen imposes various obligations on us, and provides Ipsen the right to terminate the license in the event of our material breach of the license agreement, our failure to initiate or complete development of a licensed product or our commencement of an action seeking to have an Ipsen licensed patent right declared invalid. Termination of our license from Ipsen would result in our loss of the right to use the licensed intellectual property, which would materially adversely affect our ability to develop and commercialize setmelanotide, as well as harm our competitive business position and our business prospects.

We also have licensed from Camurus its drug delivery technology, FluidCrystal, to formulate setmelanotide. Our license with Camurus imposes various obligations on us, and provides Camurus the

right to terminate the license in the event of our material breach of the license agreement. Termination of our license from Camurus would result in our inability to use the licensed intellectual property.

We may enter into additional licenses to third-party intellectual property that are necessary or useful to our business. Future licensors may also allege that we have breached our license agreement and may accordingly seek to terminate our license with them. In addition, future licensors may have the right to terminate our license at will. Any termination could result in our loss of the right to use the licensed intellectual property, which could materially adversely affect our ability to develop and commercialize setmelanotide, if approved, as well as harm our competitive business position and our business prospects.

***We have not yet registered trademarks for a commercial trade name for setmelanotide and failure to secure such registrations could adversely affect our business.***

We have not yet registered trademarks for a commercial trade name for setmelanotide. Any future trademark applications may be rejected during trademark registration proceedings. Although we would be given an opportunity to respond to those rejections, we may be unable to overcome them. In addition, in the U.S. PTO and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive those proceedings. Moreover, any name we propose to use for setmelanotide in the United States must be approved by the FDA, regardless of whether we have registered it, or applied to register it, as a trademark. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. If the FDA objects to any of our proposed product names, we may be required to expend significant additional resources in an effort to identify a suitable substitute name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA.

***If we do not obtain additional protection under the Hatch-Waxman Amendments and similar foreign legislation by extending the patent terms and obtaining product exclusivity for setmelanotide, our business may be materially harmed.***

Depending upon the timing, duration and specifics of FDA marketing approval for setmelanotide, one or more of the U.S. patents we license may be eligible for limited patent term restoration under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent term restoration of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, we may not be granted an extension because of, for example, failure to apply within applicable deadlines, failure to apply prior to expiration of relevant patents or otherwise failure to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or restoration or the term of any such extension is less than we request, our competitors may obtain approval of competing products following our patent expiration, and our ability to generate revenues could be materially adversely affected.

While we believe that setmelanotide contains active ingredients that would be treated by the FDA as a new chemical entity, or a new drug product, and, therefore, if approved, should be afforded five years of marketing exclusivity, the FDA may disagree with that conclusion and may approve generic products within a period that is less than five years. Manufacturers may seek to launch these generic products following the expiration of the applicable marketing exclusivity period, even if we still have patent protection for setmelanotide. Competition that setmelanotide may face from generic versions could materially and adversely impact our future revenue, profitability and cash flows and substantially limit our ability to obtain a return on the investments we have made in setmelanotide.

***Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our product.***

The United States has enacted and is currently implementing the America Invents Act of 2011, wide-ranging patent reform legislation. Further, the U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain future patents, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts and the U.S. PTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents or future patents.

***We may be subject to damages resulting from claims that we or our employees have wrongfully used or disclosed alleged trade secrets of their former employers.***

Our employees have been previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. 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 the former employers of our employees. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management. If we fail in defending such claims, in addition to paying money damages, we may lose valuable intellectual property rights or personnel. A loss of key personnel or their work product could hamper or prevent our ability to commercialize setmelanotide, which would materially adversely affect our commercial development efforts.

**Risks Related to Regulatory Approval and Marketing of Setmelanotide and Other Legal Compliance Matters**

***Even if we complete the necessary clinical trials, the regulatory and marketing approval process is expensive, time consuming and uncertain and may prevent us from obtaining approvals for the commercialization of setmelanotide. We depend almost entirely on the success of setmelanotide, which is still in Phase 2 clinical development. We cannot be certain that we will be able to obtain regulatory approval for, or successfully commercialize, setmelanotide. If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals, we will not be able to commercialize setmelanotide, and our ability to generate revenue will be materially impaired.***

We currently have only one product candidate, setmelanotide, in clinical development, and our business depends almost entirely on its successful clinical development, regulatory approval and commercialization. We currently have no drug products for sale and may never be able to develop marketable drug products. Setmelanotide, which is currently in Phase 2 clinical development as a treatment for genetic deficiencies affecting the MC4 pathway, will require substantial additional clinical development, testing and regulatory approval before we are permitted to commence commercialization. The clinical trials of setmelanotide are, and the manufacturing and marketing of setmelanotide will be, subject to extensive and rigorous review and regulation by numerous government authorities in the United States and in other countries where we intend to test and, if approved, market setmelanotide. Before obtaining regulatory approvals for the commercial sale of any product candidate, we must demonstrate through non-clinical testing and clinical trials that the product candidate is safe and effective for use in each target indication. This process can take many years and approval, if any, may be conditional on post-marketing studies and surveillance, and will require the expenditure of substantial resources beyond the proceeds we raise in this offering. Of the large number of drugs in development in the United States, only a small percentage will successfully complete the FDA regulatory approval process and will be commercialized. In addition, we have not discussed all of our proposed development programs with the FDA. Accordingly, even if we are able to obtain the requisite financing to continue to fund our

development and clinical trials, we cannot assure you that setmelanotide will be successfully developed or commercialized.

We are not permitted to market setmelanotide in the United States until we receive approval of an NDA from the FDA, or in any foreign countries until we receive the requisite approval from such countries. MC4 has two Phase 2 clinical trials underway for the treatment of PWS and POMC deficiency obesity. We will endeavor to work with the FDA to confirm that the FDA believes that one Phase 2 clinical trial is sufficient for these indications, but the FDA may require us to conduct additional Phase 2 clinical trials. The FDA or other regulatory authorities will also require that we conduct additional pivotal trials, and it is unclear if one or more Phase 3 trials will be required for approval in each indication, the need and length of placebo-controlled data in pivotal trials and the number of patients required for approval. We expect to seek an indication for obesity caused by genetic deficiencies affecting the MC4 pathway. If setmelanotide produces significant treatment effects in these patients, coupled with an acceptable safety profile, our overall clinical program may be less time consuming and require fewer patients than might a program for a broader obesity indication. In addition, the FDA has advised us that such a program would require development of a systematic and clearly defined approach to classifying patients' various mutations and selecting patients with mutations of clinical relevance.

Our plan is to expand our internal clinical development operations and capabilities so that we can continue to enroll and manage our Phase 2 clinical trials, and enroll and manage our Phase 3 clinical trials, if any, such that, if the clinical trials are successful, we can file an NDA in the United States by 2019. We have not finalized the design, timing and size of our Phase 3 trials with the FDA and therefore cannot assure you that they will start on time. In addition, obtaining approval of an NDA is a complex, lengthy, expensive and uncertain process, and the FDA may delay, limit or deny approval of setmelanotide for many reasons, including, among others:

- the FDA may disagree with our clinical trial design and our interpretation of data from clinical trials, or may change the requirements for approval even after it has reviewed and commented on the design for our clinical trials;
- we may not be able to demonstrate to the satisfaction of the FDA that setmelanotide is safe and effective in treating obesity caused by certain genetic deficiencies affecting the MC4 pathway;
- the results of our clinical trials may not be interpretable or meet the level of statistical or clinical significance required by the FDA for marketing approval. For example, the potential unblinding of setmelanotide studies due to easily identifiable adverse events may raise the concern that potential bias has affected the clinical trial results;
- the FDA may disagree with the number, design, size, conduct or implementation of our clinical trials;
- the FDA may require that we conduct additional clinical trials or pre-clinical studies;
- the FDA or the applicable foreign regulatory agency may identify deficiencies in our chemistry, manufacturing or controls of setmelanotide;
- the CROs that we retain to conduct our clinical trials may take actions outside of our control that materially adversely impact our clinical trials;
- the FDA may find the data from preclinical studies and clinical trials insufficient to demonstrate that setmelanotide's clinical and other benefits outweigh its safety risks;
- the FDA may disagree with our interpretation of data from our preclinical studies and clinical trials;
- the FDA may not approve the formulation, labeling or specifications of setmelanotide;
- the FDA may not accept data generated at our clinical trial sites;

- if and when our NDA is submitted and reviewed by an advisory committee, the FDA may have difficulties scheduling an advisory committee meeting in a timely manner or the advisory committee may recommend against approval of our application or may recommend that the FDA require, as a condition of approval, additional preclinical studies or clinical trials, limitations on approved labeling or distribution and use restrictions;

- the FDA may require development of a REMS as a condition of approval or post-approval, or may not agree with our proposed REMS or may impose additional requirements that limit the promotion, advertising, distribution, or sales of setmelanotide;

- the FDA or the applicable foreign regulatory agency may deem our manufacturing processes or our facilities or the facilities of our CMOs inadequate to preserve the identity, strength, quality, purity, or potency of our product; or

- the FDA may change its approval policies or adopt new regulations and guidance.

Any of these factors, many of which are beyond our control, could jeopardize our ability to obtain regulatory approval for and successfully market setmelanotide. Moreover, because our business is entirely dependent upon this product candidate, any such setback in our pursuit of regulatory approval would have a material adverse effect on our business and prospects.

***Our failure to obtain marketing approval in foreign jurisdictions would prevent setmelanotide from being marketed abroad, and any approval we are granted for setmelanotide in the United States would not assure approval of setmelanotide in foreign jurisdictions.***

In order to market and sell setmelanotide and any other product candidate that we may develop in the European Union and many other jurisdictions, we or our third-party collaborators must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the product be approved for reimbursement before the product can be sold in that country. We or these third parties may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. We may not be able to file for marketing approvals and may not receive necessary approvals to commercialize setmelanotide in any market.

***Even if we obtain marketing approval for setmelanotide, the terms of approval and ongoing regulation may limit how we manufacture and market setmelanotide and compliance with such requirements may involve substantial resources, which could materially impair our ability to generate revenue.***

Even if we receive marketing approval for setmelanotide, regulatory authorities may impose significant restrictions on setmelanotide's indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies. Setmelanotide will also be subject to ongoing FDA requirements governing labeling, packaging, storage and promotion, and recordkeeping and submission of safety and other post-market information. The FDA has significant post-market authority, including, for example, the authority to require labeling changes based on new safety information and to require post-market studies or clinical trials to evaluate serious safety risks related to the use of a drug. The FDA also has the authority to require, as part of an NDA or post-approval, the submission of a REMS. Any REMS required by the FDA may lead to increased costs to assure compliance with new post-approval regulatory requirements and potential requirements or restrictions on the sale of approved products, all of which could lead to lower sales volume and revenue.

Manufacturers of drug products and their facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMPs and other regulations. If we or a regulatory agency discover problems with setmelanotide, such as adverse events of unanticipated severity or frequency, or problems with the facility where setmelanotide is manufactured, a regulatory agency may impose restrictions on setmelanotide, the manufacturer or us, including requiring withdrawal of setmelanotide from the market or suspension of manufacturing. If we, setmelanotide or the manufacturing facilities for setmelanotide fail to comply with applicable regulatory requirements, a regulatory agency may, among other things:

- issue warning letters or untitled letters;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw marketing approval;
- suspend any ongoing clinical trials;
- refuse to approve pending applications or supplements to applications submitted by us;
- suspend or impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain setmelanotide, refuse to permit the import or export of setmelanotide, or request that we initiate a product recall.

Accordingly, assuming we receive marketing approval for setmelanotide, we and our CMOs will continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production, product surveillance and quality control. If we are not able to comply with post-approval regulatory requirements, we could have the marketing approvals for setmelanotide withdrawn by regulatory authorities and our ability to market any future products could be limited, which could adversely affect our ability to achieve or sustain profitability. Thus, the cost of compliance with post-approval regulations may have a negative effect on our operating results and financial condition.

***We are subject to healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.***

Healthcare providers, physicians and others will play a primary role in the recommendation and prescription of setmelanotide, if approved. Our future arrangements with third-party payors will expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute setmelanotide, if we obtain marketing approval. Restrictions under applicable U.S. federal and state healthcare laws and regulations include the following:

- The federal healthcare anti-kickback statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward 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 federal healthcare programs such as Medicare and Medicaid.
- The federal False Claims Act imposes criminal and civil penalties, including those from civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease, or conceal an obligation to pay money to the federal government.
- The federal Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program and also imposes obligations,

including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information.

- The federal false statements statute prohibits 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.

- The federal transparency requirements, sometimes referred to as the "Sunshine Act," under the Patient Protection and Affordable Care Act, require manufacturers of drugs, devices, biologics and medical supplies to report to the Department of Health and Human Services information related to physician payments and other transfers of value and physician ownership and investment interests.

- Analogous state laws and regulations, such as state anti-kickback and false claims laws and transparency laws, 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 some state laws 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.

Ensuring that our future business arrangements with third parties comply with applicable healthcare laws and regulations could be costly. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations, including anticipated activities to be conducted by our sales team, were found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines and exclusion from government funded healthcare programs, such as Medicare and Medicaid, any of which could substantially disrupt our operations. If any of the physicians or other providers or entities with whom we expect to do business is found not to be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

***If we obtain marketing approval for setmelanotide, we will be subject to strict enforcement of post-marketing requirements and we could be subject to substantial penalties, including withdrawal of our product from the market, if we fail to comply with all regulatory requirements.***

If we obtain marketing approval for setmelanotide, along with the manufacturing processes, post-approval clinical data, labeling, advertising and promotional activities for setmelanotide, we will be subject to continual requirements of and review by the FDA and other regulatory authorities. These requirements include, but are not limited to, restrictions governing promotion of an approved product, submissions of safety and other post-marketing information and reports, registration and listing requirements, cGMP requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, and requirements regarding the distribution of samples to physicians and recordkeeping. The FDA and other federal and state agencies, including the Department of Justice, closely regulate compliance with all requirements governing prescription drug products, including requirements pertaining to marketing and promotion of drugs in accordance with the provisions of the approved labeling and manufacturing of products in accordance with cGMP requirements. Violations of such requirements may lead to investigations alleging violations of the FDCA, and other statutes, including the False Claims Act and other federal and state health care fraud and abuse laws as well as state consumer protection laws.

For example, the FDA and other regulatory agencies strictly regulate the promotional claims that may be made about prescription products, such as setmelanotide, if approved. In particular, a product may not be promoted for uses that are not approved by the FDA or such other regulatory agencies as reflected in

the product's approved labeling. If we receive marketing approval for setmelanotide as a treatment for obesity caused by certain genetic deficiencies affecting the MC4 pathway, physicians may nevertheless prescribe setmelanotide to their patients in a manner that is inconsistent with the approved labeling. If we are found to have promoted such off-label uses, we may become subject to significant liability. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed. If we cannot successfully manage the promotion of setmelanotide, if approved, we could become subject to significant liability, which would materially adversely affect our business and financial condition.

***Our employees may engage in misconduct or other improper activities, including violating applicable regulatory standards and requirements or engaging in insider trading, which could significantly harm our business.***

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with the regulations of the FDA and applicable non-U.S. regulators, provide accurate information to the FDA and applicable non-U.S. regulators, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations 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, including trading on, information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and any precautions we take to detect and prevent this activity may be ineffective 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 these 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 significant impact on our business, including the imposition of significant fines or other sanctions.

***Our future growth depends, in part, on our ability to penetrate foreign markets, where we will be subject to additional regulatory burdens and other risks and uncertainties.***

Our future profitability will depend, in part, on our ability to commercialize setmelanotide in foreign markets for which we intend to rely on collaborations with third parties. If we commercialize setmelanotide in foreign markets, we will be subject to additional risks and uncertainties, including:

- our customers' ability to obtain reimbursement for setmelanotide in foreign markets;
- our inability to directly control commercial activities because we are relying on third parties;
- the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements;
- different medical practices and customs in foreign countries affecting acceptance in the marketplace;
- import or export licensing requirements;
- longer accounts receivable collection times;
- longer lead times for shipping;
- language barriers for technical training;
- reduced protection of intellectual property rights in some foreign countries;

- foreign currency exchange rate fluctuations; and
- the interpretation of contractual provisions governed by foreign laws in the event of a contract dispute.

Foreign sales of setmelanotide could also be adversely affected by the imposition of governmental controls, political and economic instability, trade restrictions and changes in tariffs.

***Laws and regulations governing any international operations we may have in the future may preclude us from developing, manufacturing and selling our product candidate outside of the United States and require us to develop and implement costly compliance programs.***

If we expand our operations outside of the United States, we must dedicate additional resources to comply with numerous laws and regulations in each jurisdiction in which we plan to operate. The Foreign Corrupt Practices Act of 1977, or the FCPA, prohibits any U.S. individual or business from paying, offering, authorizing payment or offering anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of such third party in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with certain accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the company, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations.

Compliance with the FCPA is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the FCPA presents particular challenges in the pharmaceutical industry, because, in many countries, hospitals are operated by the government, and doctors and other hospital employees are considered foreign officials. Certain payments to hospitals in connection with clinical trials and other work have been deemed to be improper payments to government officials and have led to FCPA enforcement actions.

Various laws, regulations and executive orders also restrict the use and dissemination outside of the United States, or the sharing with certain non-U.S. nationals, of information classified for national security purposes, as well as certain products and technical data relating to those products. If we expand our presence outside of the United States, it will require us to dedicate additional resources to comply with these laws, and these laws may preclude us from developing, manufacturing or selling certain product candidates and products outside of the United States, which could limit our growth potential and increase our development costs.

The failure to comply with laws governing international business practices may result in substantial civil and criminal penalties and suspension or debarment from government contracting. The Securities and Exchange Commission, or SEC, also may suspend or bar issuers from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions.

**Risks Related to Employee Matters and Managing Growth**

***Our future success depends on our ability to retain our key employees and consultants, and to attract, retain and motivate qualified personnel.***

We are highly dependent on Keith M. Gottesdiener, M.D., our Chief Executive Officer, Bart Henderson, our President, Lex H.T. Van der Ploeg, Ph.D., our Chief Scientific Officer, and Fred T. Fiedorek, M.D., our Chief Medical Officer. We will enter into new letter agreements with Dr. Gottesdiener, Mr. Henderson, Dr. Van der Ploeg and Dr. Fiedorek but they may terminate their employment with us at any time. The loss of their services might impede the achievement of our research, development and commercialization objectives. We also do not have any key-man life insurance on any of these key employees. We rely on consultants and advisors, including scientific and clinical advisors, to assist

us in formulating our development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us and may not be subject to non-compete agreements. Recruiting and retaining qualified scientific personnel and sales and marketing personnel will also be critical to our success. We may not be able to attract and retain these personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific personnel from universities and research institutions. Failure to succeed in clinical trials may make it more challenging to recruit and retain qualified scientific personnel.

***We will need to develop and expand our company, and we may encounter difficulties in managing this development and expansion, which could disrupt our operations.***

In connection with becoming a public company, we expect to increase our number of employees and the scope of our operations. To manage our anticipated development and expansion, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Also, our management may need to divert a disproportionate amount of its attention away from their day-to-day activities and devote a substantial amount of time to managing these development activities. Due to our limited resources, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. This may result in weaknesses in our infrastructure, and give rise to operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. The physical expansion of our operations may lead to significant costs and may divert financial resources from other projects, such as the development of setmelanotide. If our management is unable to effectively manage our expected development and expansion, our expenses may increase more than expected, our ability to generate or increase our revenue could be reduced and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize setmelanotide, if approved, and compete effectively will depend, in part, on our ability to effectively manage the future development and expansion of our company.

***Following consummation of this offering, our executive officers will provide consulting services to the Relamorelin Company, which may distract them from their focus on us.***

Prior to consummation of this offering, Keith M. Gottesdiener, M.D., Bart Henderson, Lex H.T. Van der Ploeg, Ph.D. and Fred Fiedorek, M.D. will enter into employment letters with us and become our employees but will continue to provide services to the Relamorelin Company in a consulting capacity. They will not be contractually obligated to spend a specified number of hours per week providing consulting services to the Relamorelin Company, but their employment letters with us will permit them to render consulting services to the Relamorelin Company, provided that such consulting services do not prevent them from carrying out their duties and responsibilities to us. As a result, they may have responsibilities and time commitments that may distract them from their responsibilities to us, or may be faced with decisions that could have different implications for the two companies, such as the allocation of time and resources to each of us.

***The direct or indirect ownership by our executive officers and certain of our directors of equity interests in the Relamorelin Company and the LLC entity, as well as the continued roles of certain of our directors with the Relamorelin Company and the LLC entity, may create, or may create the appearance of, conflicts of interest.***

Because of their current or former positions with the Relamorelin Company and the LLC entity, all of our executive officers directly or indirectly own equity in the Relamorelin Company and the LLC entity. In addition, Todd Foley, Ed Mathers and Neil Exter, who are members of our board of directors, may, directly or indirectly, have equity interests in the Relamoralin Company and the LLC entity. Direct or indirect

ownership by our executive officers and these directors of equity interests in the Relamorelin Company and the LLC entity creates, or may create the appearance of, conflicts of interest when these officers or directors are faced with decisions that could have different implications for the Relamorelin Company or the LLC entity than for us.

In addition, certain of our directors and officers are serving on the board of directors and/or as an officer of the Relamorelin Company and the LLC entity. We expect that prior to the consummation of this offering these directors and officers will resign from their roles as officers at these companies.

***In order to satisfy our obligations as a public company, we will need to hire additional qualified accounting and financial personnel with appropriate public company experience.***

As a newly public company, we will need to establish and maintain effective disclosure and financial controls and make changes in our corporate governance practices. We will need to hire additional accounting and financial personnel with appropriate public company experience and technical accounting knowledge, and it may be difficult to recruit and retain such personnel. Even if we are able to hire appropriate personnel, our existing operating expenses and operations will be impacted by the direct costs of their employment and the indirect consequences related to the diversion of management resources from product development efforts.

***Our internal computer systems, or those of our third-party CROs, CMOs or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our setmelanotide development programs.***

Our internal computer systems and those of our third-party CROs, CMOs, and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our programs. For example, the loss of clinical trial data for setmelanotide could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications or other data or applications relating to our technology or product candidate, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and the further development of setmelanotide could be delayed.

***We may acquire businesses or products, form strategic alliances or create joint ventures in the future, and we may not realize their benefits.***

We may acquire additional businesses or products, form strategic alliances or create joint ventures with third parties that we believe will complement or augment our existing business. If we acquire businesses with promising markets or technologies, we may not be able to realize the benefit of acquiring such businesses if we are unable to successfully integrate them with our existing operations and company culture. We may encounter numerous difficulties in developing, manufacturing and marketing any new products resulting from a strategic alliance, joint venture or acquisition that delay or prevent us from realizing their expected benefits or enhancing our business. We cannot assure you that, following any such acquisition, we will achieve the expected synergies to justify the transaction.

**Risks Related to Our Common Stock and This Offering**

***Our executive officers, directors, principal stockholders and their affiliates will continue to exercise significant control over our company after this offering, which will limit your ability to influence corporate matters and could delay or prevent a change in corporate control.***

Upon the completion of this offering, the existing holdings of our executive officers, directors, principal stockholders and their affiliates, including Pfizer Inc., investment funds affiliated with MPM

Bioventures V LLC, investment funds affiliated with TRV GP, LLC, investment funds affiliated with New Enterprise Associates 13, L.P. and NEA Ventures 2009, L.P., investment funds affiliated with two public healthcare investment funds, investment funds affiliated with Deerfield Mgmt, L.P. and J.E. Flynn Capital III, LLC, Sutrepa SAS and investment funds affiliated with OrbiMed Advisors LLC will represent beneficial ownership, in the aggregate, of approximately % of our outstanding common stock, assuming no exercise of the underwriters' option to acquire additional common stock in this offering and assuming we issue the number of shares of common stock as set forth on the cover page of this prospectus. As a result, these stockholders, if they act together, will be able to influence our management and affairs and control the outcome of matters submitted to our stockholders for approval, including the election of directors and any sale, merger, consolidation or sale of all or substantially all of our assets. These stockholders acquired their shares of common stock for substantially less than the price of the shares of common stock being acquired in this offering, and these stockholders may have interests, with respect to their common stock, that are different from those of investors in this offering and the concentration of voting power among these stockholders may have an adverse effect on the price of our common stock. In addition, this concentration of ownership might adversely affect the market price of our common stock by:

- delaying, deferring or preventing a change of control of us;
- impeding a merger, consolidation, takeover or other business combination involving us; or
- discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us.

See "Principal Stockholders" for more information regarding the ownership of our outstanding common stock by our executive officers, directors, principal stockholders and their affiliates.

***Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, even one that may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.***

We are a Delaware corporation. Provisions in our amended and restated certificate of incorporation and amended and restated bylaws may delay or prevent an acquisition of us or a change in our management. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us. Although we believe these provisions collectively will provide for an opportunity to obtain greater value for stockholders by requiring potential acquirers to negotiate with our board of directors, they would apply even if an offer rejected by our board were considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management. Any provision in our amended and restated certificate of incorporation and amended and restated bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

***If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares.***

You will suffer immediate and substantial dilution in the net tangible book value of the common stock you purchase in this offering. Assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, purchasers of common stock in this offering will experience immediate dilution of $ per share in net tangible book value of the common stock. In addition, investors purchasing common stock in this offering will contribute % of the total

amount invested by stockholders since inception but will only own % of the shares of common stock outstanding. See "Dilution" for a more detailed description of the dilution to new investors in the offering.

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

Prior to this offering, there has been no public market for shares of our common stock. Although we anticipate our common stock will be approved for listing on the NASDAQ Global Market, an active trading market for our shares may never develop or be sustained following this offering. The initial public offering price of our common stock will be determined through negotiations between us and the underwriters. This initial public offering price may not be indicative of the market price of our common stock after this offering. In the absence of an active trading market for our common stock, investors may not be able to sell their common stock at or above the initial public offering price or at the time that they would like to sell.

***If securities or industry analysts do not publish research or reports or publish unfavorable research or reports about our business, our stock price and trading volume could decline.***

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us, our business, our market or our competitors. We do not control these analysts. We do not currently have and may never obtain research coverage by securities and industry analysts. If no securities or industry analysts commence coverage of our company, the trading price for our stock would be negatively impacted. In the event we obtain securities or industry analyst coverage, if one or more of the analysts who covers us downgrades our stock, our stock price would likely decline. If one or more of these analysts issues unfavorable commentary or ceases to cover us or fails to regularly publish reports on us, interest in our stock could decrease, which could cause our stock price or trading volume to decline.

***Unfavorable global economic conditions could adversely affect our business, financial condition or results of operations.***

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. The global financial crisis caused extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn, such as the global financial crisis, could result in a variety of risks to our business, including weakened demand for our product candidate and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption, or cause our customers to delay making payments for our services. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

***Market volatility may affect our stock price and the value of your investment.***

Following this offering, the market price for our common stock is likely to be volatile, in part because our common stock has not been previously traded publicly. In addition, the market price of our common stock may fluctuate significantly in response to a number of factors, most of which we cannot control, including, among others:

- plans for, progress of, or results from preclinical studies and clinical trials of setmelanotide;
- the failure of the FDA to approve setmelanotide;
- announcements of new products, technologies, commercial relationships, acquisitions or other events by us or our competitors;

- the success or failure of other weight loss therapies and companies targeting rare diseases and orphan drug treatment;
- regulatory or legal developments in the United States and other countries;
- failure of setmelanotide, if approved, to achieve commercial success;
- fluctuations in stock market prices and trading volumes of similar companies;
- general market conditions and overall fluctuations in U.S. equity markets;
- variations in our quarterly operating results;
- changes in our financial guidance or securities analysts' estimates of our financial performance;
- changes in accounting principles;
- our ability to raise additional capital and the terms on which we can raise it;
- sales of large blocks of our common stock, including sales by our executive officers, directors and significant stockholders;
- additions or departures of key personnel;
- discussion of us or our stock price by the press and by online investor communities; and
- other risks and uncertainties described in these risk factors.

***Our quarterly operating results may fluctuate significantly.***

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 expenses related to our development programs;
- addition or termination of clinical trials;
- any intellectual property infringement lawsuit in which we may become involved;
- regulatory developments affecting setmelanotide;
- our execution of any collaborative, licensing or similar arrangements, and the timing of payments we may make or receive under these arrangements;
- the achievement and timing of milestone payments under our existing collaboration and license agreements; and
- if setmelanotide receives regulatory approval, the level of underlying demand for that product and customers' buying patterns.

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 stock to fluctuate substantially.

***We will have broad discretion in how we use the proceeds of this offering. We may not use these proceeds effectively, which could affect our results of operations and cause our stock price to decline.***

We will have considerable discretion in the application of the net proceeds of this offering. We intend to use the net proceeds from this offering to fund through the completion of Phase 3 registration studies for setmelanotide for PWS and POMC deficiency obesity and for working capital purposes, including general operating expenses, which may include funding for the hiring of additional personnel, capital expenditures, early commercialization activities and the costs of operating as a public company. As a result,

investors will be relying upon management's judgment with only limited information about our specific intentions for the use of the net proceeds of this offering. We may use the net proceeds for purposes that do not yield a significant return or any return at all for our stockholders. In addition, pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

***Our ability to use certain net operating loss carryovers and other tax attributes may be limited.***

We have incurred substantial losses during our history and we do not expect to become profitable in the near future and may never achieve profitability. Under the Internal Revenue Code of 1986, as amended, or the Code, a corporation is generally allowed a deduction for net operating losses, or NOLs, carried over from a prior taxable year. Under that provision, we can carry forward certain taxable losses of our subsidiaries to offset future taxable income, if any, until such losses are used or expire. The same is true of other unused tax attributes, such as research tax credits. As of December 31, 2015, we had approximately $26.0 and $11.9 million of unused federal and state carryforwards of NOLs, respectively, and approximately $0.7 and $0.3 million of unused federal and state carryforwards of tax credits, respectively.

If a corporation undergoes an "ownership change," generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, Sections 382 and 383 of the Code limit the corporation's ability to use carryovers of its pre-change NOLs, credits and certain other tax attributes to reduce its tax liability for periods after the ownership change. Our issuance of common stock pursuant to this offering may result in a limitation under Sections 382 and 383, either separately or in combination with certain prior or subsequent shifts in the ownership of our common stock. As a result, our ability to use carryovers of pre-change NOLs and credits to reduce our future U.S. federal income tax liability may be subject to limitations. This could result in increased U.S. federal income tax liability for us if we generate taxable income in a future period. Limitations on the use of NOLs and other tax attributes could also increase our state tax liability. Any such limitation could have a material adverse effect on our results of operations in future years. We have not completed a study to assess whether an ownership change for purposes of Section 382 or 383 has occurred, or whether there have been multiple ownership changes since our inception, due to the significant costs and complexities associated with such study.

The use of our tax attributes will also be limited to the extent that we do not generate positive taxable income in future tax periods. We do not expect to generate positive taxable income in the near future and we may never achieve tax profitability.

***Raising additional capital may cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights.***

We may seek additional capital through a combination of private and public equity offerings, debt financings, collaborations and strategic and licensing arrangements. To the extent that we raise additional capital through the sale of common stock or securities convertible or exchangeable into common stock, a stockholder's ownership interest in our company will be diluted. In addition, the terms of any such securities may include liquidation or other preferences that materially adversely affect the rights of our stockholders. Debt financing, if available, would increase our fixed payment obligations and may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through collaboration, strategic partnerships and licensing arrangements with third parties, we may have to relinquish valuable rights to setmelanotide, our intellectual property or future revenue streams, or grant licenses on terms that are not favorable to us.

***Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.***

If those stockholders who hold shares of our common stock immediately prior to the effectiveness of the registration statement of which this prospectus forms a part sell, or indicate an intention to sell, substantial amounts of our common stock in the public market after the lock-up and other legal restrictions on resale discussed in this prospectus lapse, the market price of our common stock could decline and our ability to raise adequate capital through the sale of additional equity securities could be impaired. Upon completion of this offering, there will be shares of our common stock outstanding, assuming no exercise of the underwriters' option to purchase additional shares of common stock. Of these shares, as of the date of this prospectus, approximately shares of our common stock, plus any shares sold upon exercise of the underwriters' option to purchase additional shares of common stock, will be freely tradable, without restriction, in the public market immediately following this offering (except for shares purchased by affiliates), and the remaining shares may be sold upon expiration of the lock-up agreements pertaining to this offering 180 days after the date of this offering (subject in some cases to volume limitations). The representatives of the underwriters, however, may, in their sole discretion, permit our officers, directors and other stockholders who are subject to these lock-up agreements to sell shares prior to the expiration of the lock-up agreements.

After this offering, the holders of approximately shares of our common stock will be entitled to rights with respect to the registration of their shares under the Securities Act of 1933, as amended, or the Securities Act, subject to the lock-up agreements described above, including requiring us to file registration statements covering the shares of our common stock they hold or to include their shares in registration statements that we may file for ourselves or other stockholders. See "Description of Capital Stock—Registration Rights" in this prospectus for more information regarding these registration rights. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares purchased by affiliates. Any sales of securities by these stockholders could have a material adverse effect on the market price of our common stock. These registration rights have been waived in connection with this offering.

We also intend to register all the shares of common stock that we may issue under our equity incentive plans. Effective upon the effectiveness of the registration statement of which this prospectus is a part, an aggregate of shares of our common stock will be reserved for future issuance under these plans. Once we register these shares, which we plan to do shortly after the completion of this offering, they can be freely sold in the public market upon issuance, subject to the lock-up agreements referred to above. If a large number of these shares are sold in the public market, the sales could reduce the trading price of our common stock. See "Shares Eligible for Future Sale" for a more detailed description of sales that may occur in the future.

***We are an "emerging growth company," and as a result of the reduced disclosure and governance requirements applicable to emerging growth companies, our common stock may be less attractive to investors.***

We are an "emerging growth company" as defined in the JOBS Act, and we intend to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, or Section 404, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, 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. If we choose not to comply with the auditor attestation requirements of Section 404, our auditors will not be required to attest to the effectiveness of our internal control over financial reporting. As a result, investors may become less comfortable with the effectiveness of our internal controls and the risk that material weaknesses or other deficiencies in our internal controls go undetected or may increase. If we choose to provide reduced disclosures in our periodic reports and proxy statements while we are an

emerging growth company, investors would have access to less information and analysis about our executive compensation, which may make it difficult for investors to evaluate our executive compensation practices. We cannot predict if investors will find our common stock less attractive because we will 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 stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an "emerging growth company." We will remain an "emerging growth company" until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenue of at least $1.0 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th, and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

***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 corporation governance policies.***

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 of 2002, or Sarbanes-Oxley, 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, these rules and regulations will increase our legal and financial compliance costs and will 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, which in turn could make it more difficult for us to attract and retain qualified members of our board of directors.

We are evaluating these rules and regulations, and cannot predict or estimate the amount of additional costs we may incur or the timing of such costs. 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.

For as long as we remain an emerging growth company, we may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not applicable to emerging growth companies as described in the preceding risk factor.

Pursuant to Section 404 of Sarbanes-Oxley, 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. 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 in our internal control over financial reporting, it could result in an

adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements.

***We may be at an increased risk of securities class action litigation.***

Historically, 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 us because biotechnology and pharmaceutical companies have experienced significant stock price volatility in recent years. If we were to be sued, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

***We do not intend to pay dividends on our common stock and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.***

We have never declared or paid any cash dividends on our common stock and do not currently intend to do so in the foreseeable future. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends in the foreseeable future. Therefore, the success of an investment in shares of our common stock will depend upon any future appreciation in their value. There is no guarantee that shares of our common stock will appreciate in value or even maintain the price at which you purchased them.

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements, which reflect our current views with respect to, among other things, our operations and financial performance. You can identify these forward-looking statements by the use of words such as "outlook," "believes," "expects," "potential," "continues," "may," "will," "should," "seeks," "approximately," "predicts," "intends," "plans," "estimates," "anticipates" or the negative version of these words or other comparable words. Such forward-looking statements are subject to various risks and uncertainties. Accordingly, there are or will be important factors that could cause actual outcomes or results to differ materially from those indicated in these statements. We believe these factors include but are not limited to those described under "Risk Factors" and include, among other things:

- the success, cost and timing of our product development activities and clinical trials;
- our ability to obtain and maintain regulatory approval for setmelanotide and our future product candidates, if any, and any related restrictions, limitations, and/or warnings in the label of an approved product candidate;
- our ability to obtain funding for our operations;
- the commercialization of our product candidate, if approved;
- the number of people in our target patient population;
- our plans to research, develop and commercialize our product candidate;
- our ability to operate, and the implementation of our business strategy, as an independent company;
- our ability to attract collaborators with development, regulatory and commercialization expertise;
- our expectations regarding our ability to obtain and maintain intellectual property protection for our product candidate;
- future agreements with third parties in connection with the commercialization of setmelanotide or our future product candidates, if any;
- the size and growth potential of the markets for our product candidate, and our ability to serve those markets;
- our expectations for the pricing of setmelanotide;
- the rate and degree of market acceptance of our product candidate, as well as the reimbursement coverage for our product candidate;
- regulatory developments in the United States and foreign countries;
- the performance of our third-party suppliers and manufacturers;
- the extent and success of competing therapies that are or may become available;
- our ability to attract and retain key scientific or management personnel;
- the accuracy of our estimates regarding our target patient populations, expenses, future revenues, capital requirements and needs for additional financing;
- our expectations regarding the period during which we qualify as an emerging growth company under the JOBS Act; and
- our use of the proceeds from this offering.

These factors should not be construed as exhaustive and should be read in conjunction with the other cautionary statements that are included in this prospectus. We undertake no obligation to publicly update or review any forward-looking statement, whether as a result of new information, future developments or otherwise.

## MARKET, INDUSTRY AND OTHER DATA

This prospectus includes market, industry and other data and forecasts that we have derived from independent consultant reports, publicly available information, various industry publications, other published industry sources and our internal data and estimates. Independent consultant reports, industry publications and other published industry sources generally indicate that the information contained therein was obtained from sources believed to be reliable.

Due to the rarity of some of our target indications, with the exception of the PWS Association patient registry, there is no available comprehensive patient registry or other method of establishing with precision the actual number of patients with MC4 pathway genetic defects. As a result, we have had to rely on other available sources to derive prevalence estimates for our target indications. Since the published epidemiology studies for these disorders are based on relatively small population samples, and are not amenable to robust statistical analyses, it is possible that these projections may exceed the addressable population, particularly given the need to genotype patients to definitively confirm a diagnosis.

We have estimated the potential addressable patient populations with these disorders based on the following sources and assumptions:

- *Prader-Willi Syndrome*. The prevalence rates for PWS reported by published epidemiological studies in the United States and Europe vary, with estimates ranging from one in 8,000 to one in 52,000. We believe that there is an addressable population of at least 8,000 patients in the United States, based on these epidemiological studies and supported by the number of patients that are currently registered with the PWS Association.

- *POMC Deficiency Obesity.* There are approximately 50 patients with POMC deficiency obesity noted in a series of published case reports, each mostly reporting a single or small number of patients. However, we believe our addressable patient population for this disorder is approximately 100 to 500 patients worldwide, as most of the reported cases are from a small number of academic research centers, and because genetic testing for POMC deficiency is often unavailable and rarely performed. Based on discussion with experts in rare diseases, we also believe the number of diagnosed cases will increase several-fold with increased awareness of this disorder and the availability of new treatments.

- *POMC Heterozygous Deficiency Obesity and LepR Deficiency Obesity.* Our addressable patient population estimate for POMC heterozygous deficiency obesity is approximately 4,000 patients in the United States, and for LepR deficiency obesity is approximately 500 to 2,000 patients in the United States. These estimates are based on:

  - epidemiology studies on POMC heterozygous deficiency and LepR deficiency in small cohorts of patients comprised of children with severe obesity and adults with severe obesity who have a history of early onset obesity;

  - United States Census Bureau figures for adults and children, and Centers for Disease Control and Prevention, or CDC, prevalence numbers for severe adult obese patients (BMI>40 $kg/m^2$) and for severe early onset obese children ($99^{th}$ percentile at ages 2 to 17 years old);

  - with wider availability of genetic testing expected for POMC heterozygous deficiency and LepR deficiency and increased awareness of new treatments, our belief that up to 40% of patients with these disorders may eventually be diagnosed.

  Using these sources and assumptions, we calculated our estimates for addressable populations by multiplying (x) the estimated prevalence from epidemiology studies of approximately 2% for POMC heterozygous and 1% for LepR deficiency, (y) our estimate of the number of patients comprised of children with severe obesity and our estimate of a projected number of adults with

severe obesity who have a history of early onset obesity and (z) our estimated diagnosis rate of up to 40%.

We are conducting additional epidemiology studies to strengthen these prevalence projections. In parallel, we are also developing a patient registry for diagnosed patients with POMC deficiency and LepR deficiency which will further inform prevalence projections for these rare genetic orders.

See "Risk Factors—*Risks Related to the Development of Our Product Candidate—The number of patients suffering from each of the MC4 pathway deficiencies we are targeting is small and has not been established with precision. If the actual number of patients with any of these conditions is smaller than we estimate or if any approval that we obtain is based on a narrower definition of these patient populations, our revenue and ability to achieve profitability may be materially adversely affected."* for additional information.

## USE OF PROCEEDS

We estimate that the net proceeds to us from the sale of the shares of our common stock offered by us will be approximately $ million, based on an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting underwriting discounts and commissions. If the underwriters' option to purchase additional shares in this offering is exercised in full, we estimate that our net proceeds will be approximately $ million, after deducting underwriting discounts and commissions.

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) the net proceeds to us from this offering by approximately $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting underwriting discounts and commissions. Similarly, each increase (decrease) of one million shares in the number of shares of common stock offered by us would increase (decrease) the net proceeds to us from this offering by approximately $ million, assuming the assumed initial public offering price remains the same and after deducting underwriting discounts and commissions.

As of December 31, 2015, we had cash and cash equivalents of approximately $34.9 million. In the past, we have received capital contributions from the Predecessor Company, the Relamorelin Company and the LLC entity from time to time as needed. In addition, we raised aggregate gross proceeds of $40.0 million in August 2015 and December 2015 from the sale of our series A preferred stock. We intend to use the net proceeds from this offering, together with our existing cash resources, as follows:

- approximately $ million to fund the manufacturing and development of setmelanotide through completion of our Phase 3 registration studies for the treatment of Prader-Willi Syndrome;
- approximately $ million for the manufacturing and development of setmelanotide through completion of our Phase 3 registration studies for the treatment of POMC deficiency obesity; and
- the remainder for working capital purposes, and other general corporate purposes.

Our expected use of net proceeds from this offering represents our current intentions based upon our present plans and business condition. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the closing of this offering, or the amounts that we will actually spend on the uses set forth above. The amounts and timing of our actual use of the net proceeds will vary depending on numerous factors, including the progress of our clinical trials and other development efforts for setmelanotide and other factors described in "Risk Factors" beginning on page 14, as well as the amount of cash we use in our operations. As a result, our management will have broad discretion in the application of the net proceeds, and investors will be relying on our judgment regarding the application of the net proceeds of this offering. In addition, we might decide to postpone or not pursue clinical trials or preclinical activities if the net proceeds from this offering and the other sources of cash are less than expected.

Pending application of the net proceeds, we intend to invest the net proceeds from this offering in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

## DIVIDEND POLICY

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 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 and cash equivalents and capitalization as of December 31, 2015, as follows:

- on an actual basis;
- on a pro forma basis to reflect the issuance of shares of series A-1 junior preferred stock and shares of series A-2 junior preferred stock in connection with the Distribution and the conversion of all outstanding shares of our preferred stock into shares of common stock upon the closing of this offering;
- on a pro forma as adjusted basis to give further effect to the issuance and sale of shares of our common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range listed on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Our capitalization following the closing of this offering will be adjusted based on the actual initial public offering price and other terms of the offering determined at pricing. You should read this information in conjunction with our financial statements and the related notes appearing at the end of this prospectus, the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section and other financial information contained in this prospectus. You should also read this table together with the information contained in this prospectus, including "Use of Proceeds," and the historical financial statements and related notes included elsewhere in this prospectus.

| | As of December 31, 2015 | | |
|---|---|---|---|
| | Actual | Pro Forma (unaudited) (in thousands) | Pro Forma As Adjusted |
| Cash and cash equivalents | $ 34,869 | $ | $ |
| Convertible preferred stock: | | | |
| Series A preferred stock; 40,000,000 shares authorized; 40,000,000 shares issued and outstanding actual; no shares issued and outstanding pro forma and pro forma as adjusted | 40,000 | | |
| Stockholders' equity (deficit): | | | |
| Common stock, $0.001 par value; 150,000,000 shares authorized, 93,500,000 shares issued and outstanding actual; shares issued and outstanding pro forma; and shares issued and outstanding pro forma as adjusted | 93 | | |
| Additional paid-in capital | 42,579 | | |
| Accumulated deficit | (50,671) | | |
| Total stockholders' equity (deficit) | (7,999) | | |
| Total capitalization | $ 32,001 | | |

The information above is illustrative only and our capitalization following the completion of this offering will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing.

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the estimated price range shown on the cover page of this prospectus, would increase (decrease) the amount of cash and cash equivalents, additional paid-in capital, total stockholders' equity (deficit) and total capitalization on a pro forma as adjusted basis by approximately $ million,

assuming the number of shares offered by us, as set forth on the cover page 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 one million shares offered by us would increase (decrease) cash and cash equivalents, total stockholders' equity (deficit) and total capitalization on a pro forma as adjusted basis by approximately $ million, assuming the assumed initial public offering price remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A one million share increase in the number of shares offered by us together with a concomitant $1.00 increase in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase each of cash and cash equivalents and total stockholders' (deficit) equity by approximately $ million after deducting underwriting discounts and commissions and estimated offering expenses payable by us. Conversely, a one million share decrease in the number of shares offered by us together with a concomitant $1.00 decrease in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would decrease each of cash and cash equivalents and total stockholders' (deficit) equity by approximately $ million after deducting underwriting discounts and commissions and estimated offering expenses payable by us. The pro forma as adjusted information discussed above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

## 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 initial public offering price per share and the pro forma as adjusted net tangible book value per share of our common stock after this offering.

Our historical net tangible book value as of December 31, 2015 was approximately $32.0 million, or $0.34 per share of our common share. Our historical net tangible book value represents our total tangible assets less our total liabilities. Net historical tangible book value per common share is our historical net tangible book value divided by the number of common shares outstanding as of December 31, 2015.

Our pro forma net tangible book value as of December 31, 2015 was approximately $ million, or $ per share of our common stock. Pro forma net tangible book value represents our total tangible assets less our total liabilities, after giving effect to (1) the issuance of shares of series A-1 junior preferred stock and shares of series A-2 junior preferred stock in connection with the Distribution, and (2) the conversion of all outstanding shares of our preferred stock into shares of common stock upon the closing of this offering. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of common shares outstanding as of December 31, 2015 after giving effect to the pro forma adjustments described above.

Our pro forma as adjusted net tangible book value represents our pro forma net tangible book value, plus the effect of the issuance and sale of shares of our common stock in this offering at an assumed initial public offering of $ per share (the midpoint of the price range set forth on the cover page of this prospectus), after deducting underwriting discounts and commissions and estimating offering expenses payable by us. Pro forma as adjusted net tangible book value per share represents pro forma as adjusted net tangible book value divided by the total number of common shares outstanding as of December 31, 2015, after giving effect to the pro forma adjustments and the offering described above. Our pro forma as adjusted net tangible book value as of December 31, 2015 was approximately $ million, or $ per share of our common stock. This amount represents an immediate increase in the pro forma adjusted net tangible book value of $ per share to existing shareholders and an immediate dilution of $ per share to new investors purchasing shares at an assumed initial public offering price of $ per share (the midpoint of the price range set forth on the cover page of this prospectus).

The following table illustrates this dilution on a per share basis:

| | | |
|---|---|---|
| Assumed initial public offering price per share | | $ |
| Historical net tangible book value per share as of December 31, 2015 | $ | |
| Increase per share attributable to pro forma adjustments described above | | |
| Pro forma net tangible book value per share at December 31, 2015 | | |
| Increase per share attributable to new investors | | |
| Pro forma as adjusted net tangible book value per share at December 31, 2015 after giving effect to the offering | | |
| Dilution per share to new investors | | $ |

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted net tangible book value per share after this offering by approximately $ per share and the dilution per share to investors participating in this offering by approximately $ per share, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering costs payable by us.

The following table summarizes, on a pro forma basis as of December 31, 2015, the total number of shares purchased from us, the total consideration paid, or to be paid, and the average price per share paid, or to be paid, by existing stockholders and by new investors in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, before deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. As the table below shows, new investors purchasing shares in this offering will pay an average price per share substantially higher than our existing stockholders paid.

| | Shares Purchased | | Total Consideration | | Average Price Per Share |
|---|---|---|---|---|---|
| | Number | Percentage | Amount (in thousands) | Percentage | |
| Existing stockholders | | % | $ | % | $ |
| New investors | | % | | % | |
| Total | | 100% | $ | 100% | $ |

Except as otherwise indicated, the discussion and tables above assume no exercise of the underwriters' option to purchase additional shares of our common stock in this offering. If the underwriters' option to purchase additional shares is exercised in full:

- the percentage of outstanding common stock held by existing stockholders will be reduced to % of the total number of shares of common stock to be outstanding upon completion of this offering; and
- the number of shares of common stock held by investors participating in this offering will be increased to shares, or % of the total number of shares of common stock to be outstanding upon completion of this offering.

Effective immediately upon closing of this offering, an aggregate of shares of our common stock will be reserved for issuance under our amended and restated 2015 equity incentive plan, or the Plan, and an aggregate of shares of our common stock will be reserved for issuance under our 2016 employee stock purchase plan. Furthermore, we may choose to raise additional capital through the sale of equity or convertible debt securities due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that any new options are issued under our equity incentive plans or we issue additional shares of common stock or other equity or convertible debt securities in the future, there will be further dilution to investors participating in this offering.

## SELECTED FINANCIAL DATA

The following selected statements of operations data for the years ended December 31, 2014 and 2015 and the balance sheet data as of December 31, 2014 and 2015 are derived from our audited financial statements appearing elsewhere in this prospectus. You should read this data together with our audited financial statements and related notes appearing elsewhere in this prospectus and the information under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Our financial statements for the periods presented include allocations of costs from certain shared functions provided to us by the Relamorelin Company. These allocations were made based on either a specific identification basis or, when specific identification is not practicable, a proportional cost allocation method which allocates expenses based on the percentage of employee time and research and development effort expended on our business as compared to total employee time and research and development effort, and have been included in our financial statements for the periods presented.

The financial statements included in this prospectus may not necessarily reflect our financial position, results of operations and cash flows as if we had operated as an independent company during all of the periods presented. See "Corporate Reorganization."

Our historical results are not necessarily indicative of our future results.

| | Year Ended December 31, 2014 | Year Ended December 31 2015 |
|---|---|---|
| | (in thousands, except share and per share data) | |
| Operating expenses: | | |
| Research and development | $ 5,280 | $ 7,148 |
| General and administrative | 1,213 | 3,425 |
| Total operating expenses | 6,493 | 10,573 |
| Loss from operations | (6,493) | (10,573) |
| Other income (expense): | | |
| Revaluation of Series A Investor Right/Obligation | — | (500) |
| Total other income (expense): | — | (500) |
| Net loss and comprehensive loss | $ (6,493) | $ (11,073) |
| Net loss attributable to common stockholders | $ (6,493) | $ (12,000) |
| Net loss attributable to common stockholders per common share, basic and diluted | $ (0.07) | $ (0.13) |
| Weighted average common shares outstanding, basic and diluted | 93,500,000 | 93,500,000 |
| Pro forma net loss attributable to common stockholders per common share, basic and diluted (unaudited) | $ (0.07) | $ (0.11) |
| Pro forma weighted average common shares outstanding, basic and diluted (unaudited) | 93,500,000 | 105,038,462 |

| | December 31, 2014 | December 31, 2015 |
|---|---|---|
| **Balance Sheet Data:** | | |
| Cash and cash equivalents | $ 152 | $ 34,869 |
| Working capital (deficit) | (358) | 30,218 |
| Total assets | 194 | 37,275 |
| Convertible preferred stock | — | 40,000 |
| Accumulated deficit | (39,598) | (50,671) |
| Total stockholders' equity (deficit) | $ (358) | $ (7,999) |

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

*You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements and the related notes and other financial information included 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 and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those set forth in the "Risk Factors" section of this prospectus, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.*

### Overview

We are a biopharmaceutical company focused on the development and commercialization of peptide therapeutics for the treatment of rare genetic deficiencies that result in life-threatening metabolic disorders. Our lead peptide product candidate is setmelanotide, a potent, first-in-class MC4R agonist for the treatment of rare genetic disorders of obesity. We believe setmelanotide, for which we have exclusive worldwide rights, has the potential to serve as replacement therapy for the treatment of MC4 pathway deficiencies. Our development efforts are initially focused on two of these deficiencies, PWS and POMC deficiency obesity, for which there are currently no effective or approved treatments. We believe that the MC4 pathway is a compelling target for treating these genetic disorders because of its critical role in regulating appetite and weight, and that peptide therapeutics are uniquely suited for activating this target. We have demonstrated initial proof of concept in our ongoing Phase 2 clinical trial in POMC deficiency obesity, a disorder of extreme and unrelenting appetite and obesity, in which setmelanotide dramatically reduced both weight and hunger. We are also conducting a Phase 2 clinical trial in PWS, and we expect to report results from these clinical trials in the third quarter of 2016. These clinical trials expand upon previous setmelanotide clinical trials which enrolled over 200 general obese patients and demonstrated significant weight loss with good tolerability.

We have leveraged skilled experts, consultants, Contract Research Organizations, or CROs, and contractors to manage our clinical operations under the leadership and direction of our management. We expect to expand our infrastructure to manage our clinical, finance and commercial operations with a higher proportion of full-time employees. We have nine employees who are providing services to us either under our Payroll Services Agreement or directly employed by us, three of whom hold Ph.D. or M.D. degrees. Of these employees, six are engaged in development activities and three are engaged in support administration, including business development and finance. In the near-term, we expect to significantly expand our clinical and finance personnel, in particular, and will incur increased expenses as a result.

Our operations to date have been limited primarily to conducting research and development activities for setmelanotide. To date, we have not generated any product revenue and have financed our operations primarily through capital contributions from the Predecessor Company, the Relamorelin Company and the LLC entity and, more recently, the private placement of equity securities to venture capital investors. We will not generate revenue from product sales until we successfully complete development and obtain regulatory approval for setmelanotide, which we expect will take a number of years and is subject to significant uncertainty. We expect to continue to fund our operations through the sale of equity, debt financings or other sources. We intend to build our own marketing and commercial sales infrastructure and we may enter into collaborations with other parties for certain markets outside the United States. However, we may be unable to raise additional funds or enter into such other arrangements when needed on favorable terms, or at all. If we fail to raise capital or enter into such other arrangements as, and when, needed, we may have to significantly delay, scale back or discontinue the development or commercialization of our product candidates. See "Risk Factors—*Risks Related to Our Financial Position and Need for Capital*" beginning on page 14 of the S-1 filing for additional information.

As of December 31, 2015, we had an accumulated deficit of $50.7 million. Our net losses were $6.5 million and $11.1 million, for the year ended December 31, 2014 and December 31, 2015, respectively. We expect to continue to incur significant expenses and increasing operating losses over the foreseeable future. We expect our expenses will increase substantially in connection with our ongoing activities, as we:

- continue to conduct clinical trials for setmelanotide;
- engage CMOs for the manufacture of setmelanotide for clinical trials;
- seek regulatory approval for setmelanotide;
- expand our clinical and financial operations and build a marketing and commercialization infrastructure; and
- operate as a public company.

As of December 31, 2015, our existing cash and cash equivalents were approximately $34.9 million. We expect that the net proceeds of this offering will enable us to fund our operating expenses through at least the end of 2018.

***Corporate Background and Distribution***

We are a Delaware corporation organized in February 2013 under the name Rhythm Metabolic, Inc. Prior to our organization and the Corporate Reorganization, we were part of the Predecessor Company which commenced active operations in 2010. As a result of the Corporate Reorganization, we became a wholly-owned subsidiary of the LLC entity. In August 2015 and December 2015, we sold shares of our series A preferred stock to investors pursuant to an equity financing. The LLC entity remains our largest stockholder, holding shares of our common stock representing, as of December 31, 2015, an approximately 70% equity interest in us with the balance being held by our series A investors and management team.

Prior to consummation of this offering, as a part of the Distribution, the LLC entity will distribute its shares of our common stock to its members, which shares we anticipate will be exchanged by some of its members for newly-authorized shares of our series A-1 and series A-2 junior preferred stock, convertible into our common stock on a one-to-one basis upon the closing of this offering.

We share certain costs with the Relamorelin Company, including finance, accounting, research and development and operations. Following the Distribution and prior to consummation of this offering, the employees of the Relamorelin Company will become our employees and will enter into employment agreements with us and continue to provide services to the Relamorelin Company in a consulting capacity. Following consummation of this offering, we may continue to share some services with the Relamorelin Company, as may be deemed appropriate by our management. See "Corporate Reorganization."

**Financial Operations Overview**

***Revenue***

To date, we have not generated any revenue from product sales and do not expect to generate any revenue from the sale of setmelanotide for at least several years. We cannot predict if, when, or to what extent we will generate revenues from the commercialization and sale of setmelanotide. Setmelanotide is currently our only product candidate, and we may never succeed in achieving regulatory approval for setmelanotide or any other product candidate that we decide to pursue in the future.

***Research and development expenses***

Research and development expenses consist primarily of costs incurred for our research activities, including our drug discovery efforts, and the development of setmelanotide, which include:

- expenses incurred under agreements with third parties, including CROs that conduct research and development and preclinical activities on our behalf, and the cost of consultants and CMOs that manufacture drug products for use in our preclinical studies and clinical trials;
- employee-related expenses allocated to us under the Payroll Services Agreement, including salaries, benefits, and stock-based compensation expense;
- the cost of lab supplies and acquiring, developing, and manufacturing preclinical study materials; and
- facilities, depreciation, and other expenses, which include direct and allocated expenses from the Relamorelin Company for rent and maintenance of facilities, insurance and other operating costs.

We expense research and development costs to operations as incurred. Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses. The capitalized amounts are expensed as the related goods are delivered or the services are performed.

The following table summarizes our current research and development programs for setmelanotide.

| Research and Development Summary | Year Ended December 31, 2014 | 2015 |
|---|---|---|
| | (in thousands) | |
| Setmelanotide Program | $ 5,280 | $ 7,148 |

We are unable to predict the duration and costs of the current or future clinical trials of setmelanotide. The duration, costs, and timing of clinical trials and development of setmelanotide will depend on a variety of factors, including:

- the scope, rate of progress, and expense of our ongoing, as well as any additional, clinical trials and other research and development activities;
- the rate of enrollment in clinical trials;
- the safety and efficacy demonstrated by setmelanotide in future clinical trials;
- changes in regulatory requirements;
- changes in clinical trial design; and
- the timing and receipt of any regulatory approvals.

A change in the outcome of any of these variables with respect to the development of setmelanotide would significantly change the costs and timing associated with its development and potential commercialization.

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 our product candidate development program progresses. However, we do not believe that it is possible at this time to accurately project total program-specific expenses to commercialization and there can be no guarantee that we can meet the funding needs associated with these expenses.

***General and administrative expenses***

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation, relating to our full-time employees and for personnel which have been allocated from the Relamorelin Company. Other significant costs include rent which has been allocated from the Relamorelin Company, 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 to support continued and expanding development efforts, potential commercialization of setmelanotide and increased costs of operating as a public company. These increases will likely include increased costs related to the hiring of additional personnel and fees to outside consultants, lawyers and accountants, compliance with exchange listing and SEC expenses, insurance and investor relations costs, among other expenses.

**Critical Accounting Policies and Estimates**

Our discussion and analysis of our financial condition and results of operations are based on our financial statements, which we have prepared in accordance with United States generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenues and expenses during the reporting periods. On an ongoing basis, we evaluate our estimates and judgments, including those described in greater detail below. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in the notes to our financial statements included elsewhere in this prospectus, we believe that the following accounting policies are the most critical to aid in fully understanding and evaluating our financial condition and results of operations.

***Basis of Presentation***

We have historically existed and functioned as part of the consolidated businesses of the Predecessor Company. Our MC4 business was contributed to us from the Predecessor Company on March 21, 2013 as part of the Corporate Reorganization. At that time, we also entered into the Payroll Services Agreement. Prior to consummation of this offering, the shared employees will enter into new agreements with us. We share costs with the Relamorelin Company, including finance, accounting, research and development and operations. These shared costs have been allocated to us from the Relamorelin Company for the purposes of preparing the financial statements based on a specific identification basis or, when specific identification is not practicable, a proportional cost allocation method which allocates expenses based upon the percentage of employee time and research and development effort expended on our business as compared to total employee time and research and development effort. The proportional use basis adopted to allocate shared costs is in accordance with the guidance of Staff Accounting Bulletin Topic 1B. Our management has determined that the proportional use method of allocating costs to us from the Relamorelin Company is reasonable.

***Accrued research and development expenses***

As part of the process of preparing our financial statements, we are required to estimate the value associated with goods and services received in the period in connection with research and development activities. This process involves reviewing quotations and contracts, identifying 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, or alternatively, the deferral of amounts paid for goods or services to be incurred in the future. 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 or prepaid expenses as of each balance sheet date in our financial statements based on facts and circumstances known to us at the time those financial statements are prepared. 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 fees paid to CROs and CMOs in connection with research and development activities.

We accrue our expenses related to CROs and CMOs based on our estimates of the services received and efforts expended pursuant to quotes and contracts with CROs and CMOs that conduct research and development and manufacturing 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. The allocation of CRO upfront expenses for both clinical trials and preclinical studies generally tracks actual work activity. However, 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 delivered over a period of time, 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 accrued or prepaid expense accordingly. Although we do not expect our estimates to be materially different from amounts actually 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 actually incurred.

***Series A Investor Right/Obligation & Series A Investor Call Option***

Pursuant to the series A stock purchase agreement, by and among us and the other persons that are parties to such agreement as investors, or the series A investors, we issued 25,000,000 shares of series A preferred stock at a purchase price of $1.00 per share in August 2015 as part of an initial tranche of financing. Pursuant to the series A stock purchase agreement, the series A investors had the obligation, or the Series A Investor Right/Obligation, to purchase additional shares of series A preferred stock as part of a second tranche of financing based on the achievement of a specific milestone set forth in the series A preferred stock purchase agreement, or the Second Tranche Milestone. Additionally, subject to the terms and conditions set forth in the series A stock purchase agreement, the series A investors had the option, or the Series A Investor Call Option, to purchase additional shares of series A preferred stock in the event that the Second Tranche Milestone was not achieved. The Series A Investor Right/Obligation was exercised and the Series A Investor Call Option expired on December 1, 2015 upon the Series A Second Tranche Closing.

We classified our Series A Investor Right/Obligation and our Series A Investor Call Option as liabilities as they are free-standing financial instruments. The Series A Investor Right/Obligation and the Series A Investor Call Option were recorded at fair value upon the issuance of Series A Convertible Preferred Stock in August 2015, and subsequently remeasured to fair value. Changes in fair value of the Series A Investor Right/Obligation and the Series A Investor Call Option are recognized as a component of other income (expense), net in the statement of operations and comprehensive loss. Upon the closing of an initial public offering with a minimum price per share and gross proceeds of at least $1.00, as adjusted for any splits or similar changes, and $50 million, respectively, the series A preferred stock will automatically convert into shares of common stock on a 1-for-1 basis. The shares of series A preferred stock will be converted into common stock, at par value, with the remainder recorded to additional paid-in capital.

We used the Black-Scholes option-pricing model, which incorporates assumptions and estimates, to value the Series A Investor Call Option and assessed these assumptions and estimates on a quarterly basis as additional information impacting the assumptions was obtained. Estimates and assumptions impacting the fair value measurement include the fair value per share of the underlying series A preferred stock, the expected term of the Series A Investor Call Option, risk-free interest rate, expected dividend yield and expected volatility of the price of the underlying preferred stock. We determined the fair value per share of the underlying preferred stock by taking into consideration the most recent sale of our convertible preferred stock and the investors' right to invest in a subsequent tranche. As we are a private company and lack company-specific historical and implied volatility information of our stock, we estimated our expected stock volatility based on the historical volatility of publicly traded peer companies for a term comparable to the estimated term of the Series A Investor Call Option. The risk-free interest rate was determined by reference to the U.S. Treasury yield curve for time periods approximately equal to the estimated term of the Series A Investor Call Option. A dividend yield of zero was assumed.

Prior to the conversion, we estimated the fair value of the Series A Investor Right/Obligation as the probability-weighted present value of the expected benefit of the investment.

***Income taxes***

Income taxes have been calculated on a separate tax return basis. Certain of our activities and costs have been included in the tax returns filed by the Relamorelin Company and the LLC entity. Prior to the Corporate Reorganization, our operations were included in the tax returns filed by the Predecessor Company. We have filed tax returns on our own behalf since the Corporate Reorganization.

We account for uncertain tax positions in accordance with the provisions of Accounting Standards Codification, or ASC, Topic 740, *Accounting for Income Taxes*, or ASC 740. When uncertain tax positions exist, we recognize the tax benefit of tax positions to the extent that the benefit will more likely than not be realized. The determination as to whether the tax benefit will more likely than not be realized is based upon the technical merits of the tax position as well as consideration of the available facts and circumstances. As of December 31, 2015, we do not have any uncertain tax positions.

Income taxes are recorded in accordance with ASC 740, which provides for deferred taxes using an asset and liability approach. We recognize deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements or tax returns. We determine our deferred tax assets and liabilities based on differences between financial reporting and tax bases of assets and liabilities, which are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. Valuation allowances are provided, if based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

Interest and penalties on uncertain tax positions are recorded in the provision (benefit) for income taxes in the statements of operations. During the years ended December 31, 2014 and 2015, we had no amounts accrued for interest and penalties related to uncertain tax positions.

As of December 31, 2015, we had NOL carryforwards to reduce federal and state incomes taxes of approximately $26,040 and $11,873, respectively. If not utilized, these carryforwards begin to expire in 2033. At December 31, 2015, we also had available research and development tax credits for federal and state income tax purposes of approximately $714 and $277, respectively. The federal and state credits begin to expire in 2033 and 2028, respectively.

Utilization of the NOL and tax credit carryforwards may be subject to a substantial annual limitation due to ownership change limitations that have occurred previously or that could occur in the future, as provided by Section 382 of the Code, or Section 382, as well as similar state provisions and other provisions of the Code. Ownership changes may limit the amount of NOLs and tax credit carryforwards that can be utilized annually to offset future taxable income and tax, respectively. In general, an ownership change, as

defined by Section 382, results from transactions that increase the ownership of 5.0% stockholders in the stock of a corporation by more than 50% in the aggregate over a three-year period.

***Stock-based compensation***

Prior to August 2015, we did not have our own equity compensation plan. In August 2015, our Board of Directors and our stockholders approved and we adopted the Plan, which we expect to amend and restate prior to consummation of this offering. The Plan provides for the grant of incentive and non-qualified stock options and restricted stock grants to employees, consultants, advisors and directors, as determined by the Board of Directors. We have reserved 16,500,000 shares of common stock under the Plan. The first option grants issued by us under the Plan were issued in the fourth quarter of 2015. Shares of common stock issued upon exercise of stock options are generally issued from authorized but unissued shares. The Plan provides that the exercise price of incentive stock options cannot be less than 100% of the fair market value of the common stock on the date of the award for participants who own less than 10% of the total combined voting power of stock, and not less than 110% for participants who own more than 10% of the voting power. Options and restricted stock granted under the Plan will vest over periods as determined by our Board of Directors.

We estimate the fair value of our stock-based awards to employees and non-employees using the Black-Scholes option-pricing model, which requires the input of highly subjective assumptions, including (a) the expected volatility of our stock, (b) the expected term of the award, (c) the risk-free interest rate, and (d) 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 have based our estimate of expected volatility on the historical volatility of a group of companies in the pharmaceutical and biotechnology industries in a similar stage of development as us and that are publicly traded. For these analyses, we have selected companies with comparable characteristics to ours including enterprise value, risk profiles and with historical share price information sufficient to meet the expected life of the stock-based awards. We compute the historical volatility data using the daily closing prices for the selected companies' shares during the equivalent period of the calculated expected term of our stock-based awards. We will continue to apply this process until a sufficient amount of historical information regarding the volatility of our own stock price becomes available. We have estimated the expected life of our employee stock options using the "simplified" method, whereby, the expected life equals the average of the vesting term and the original contractual term of the option. The risk-free interest rates for periods within the expected life of the option are based on the U.S. Treasury yield curve in effect during the period the options were granted.

We are also required to estimate forfeitures at the time of grant, and revise those estimates in subsequent periods if actual forfeitures differ from estimates. We use historical data to estimate pre-vesting option forfeitures and record stock-based compensation expense only for those awards that are expected to vest. To the extent that actual forfeitures differ from our estimates, the difference is recorded as a cumulative adjustment in the period the estimates were revised. Stock-based compensation expense recognized in the financial statements is based on awards that are ultimately expected to vest.

Stock compensation expense incurred under the Plan was $192 during the year ended December 31, 2015 consisting of stock-based compensation expense for awards granted to employees and our directors of $39 and employees of the Relamorelin Company that are allocated to us of $153. At December 31, 2015, we have unrecognized compensation expense related to these awards of $4,379 and we expect to recognize our portion over a weighted-average period of approximately 3.4 years.

The LLC entity applies the fair value recognition provisions of Financial Accounting Standards Board, or FASB, ASC Topic 718, *Compensation—Stock Compensation*, or ASC 718, to account for stock-based compensation. The LLC entity recognizes stock-based compensation expense based on the estimated fair value of each stock option or restricted common unit on the date of grant, net of estimated forfeitures. The grant date fair value of awards subject to service-based vesting, net of estimated forfeitures, is recognized

on a straight-line basis over the requisite service period, which is generally the vesting period of the respective awards. In accordance with ASC 718, stock-based compensation expense related to restricted common units that are subject to both performance and service-based vesting conditions is recognized using an accelerated recognition model.

The fair value of a restricted common unit is estimated based on its fair value on the measurement date as if the restricted common unit was fully vested at that date, which is equivalent to the fair value of a common unit. Refer to our later discussion on the determination of the fair value of a common unit.

In addition to the assumptions used in the estimate of fair value of the LLC entity's restricted common units, the amount of compensation expense we and the LLC entity recognize in our statements of operations includes an estimate of restricted common unit forfeitures. Under ASC 718, we and the LLC entity are required to estimate the level of forfeitures expected to occur and record compensation expense only for those awards that we and the LLC entity ultimately expect will vest. Due to the lack of historical forfeiture activity, we and the LLC entity estimate our forfeiture rate based on data from a representative group of companies. Changes in the estimated forfeiture rate can have a significant impact on our stock-based compensation expense as the cumulative effect of adjusting the rate is recognized in the period the forfeiture estimate is changed. For example, if a revised forfeiture rate is higher than the previously estimated forfeiture rate, an adjustment is made that will result in a decrease to the stock-based compensation expense recognized in the financial statements. If a revised forfeiture rate is lower than the previously estimated forfeiture rate, an adjustment is made that will result in an increase to the stock-based compensation expense recognized in the financial statements. To date actual forfeitures have not been material.

The stock compensation expense allocated to us from the LLC entity was $66 and $106 for the years ended December 31, 2014 and 2015, respectively. At December 31, 2015, the total LLC entity unrecognized compensation expense related to unvested restricted common unit awards, including estimated forfeitures, was $516 and we expect to recognize our portion over a weighted-average period of approximately 1.4 years.

The following table summarizes the classification of the stock-based compensation expense recognized in our statements of operations and comprehensive loss.

| | Year Ended December 31, | |
|---|---|---|
| | 2014 | 2015 |
| | (in thousands) | |
| Research and development | $ 23 | $ 144 |
| General and administrative | 43 | 154 |
| Total | $ 66 | $ 298 |

***Determination of the fair value of LLC common units and Rhythm Pharmaceuticals, Inc. common stock***

We and the LLC entity operate as private companies with no active public market for our common stock and the LLC entity's common and preferred units. Therefore, the boards of directors estimated the fair value of our common stock and the LLC entity's common units at various dates, with input from management, considering our and the LLC entity's most recently available third-party valuations of common stock and common units, respectively, and the assessment of additional objective and subjective factors that were believed to be relevant and which may have changed from the date of the most recent valuation through the date of the applicable grant or award.

We and the LLC entity determined the estimated per share fair value of our common stock and the LLC entity's common units at various dates using contemporaneous valuations performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants Practice Aid,

*Valuation of Privately-Held Company Equity Securities Issued as Compensation*, or the Practice Aid, for financial reporting purposes.

In conducting the contemporaneous valuations, we and the LLC entity considered all objective and subjective factors that we and the LLC entity believed to be relevant for each valuation conducted, including each respective entity's best estimate of its business condition, prospects and operating performance at each valuation date. Within the contemporaneous valuations performed, a range of factors, assumptions and methodologies were used.

The significant factors included:

- the lack of an active public market for our common stock and the LLC entity's common and preferred units;
- the prices at which we and the LLC entity sold our and its preferred shares and units, respectively, to outside investors in arm's length transactions, and the rights, preferences and privileges of those preferred shares and units, respectively, relative to common shares and units;
- Our and LLC entity's results of operations, financial position and the status of each entity's research and preclinical development efforts;
- the material risks related to each entity's business;
- the market performance of publicly traded companies in the life sciences and biotechnology sectors, and recently completed mergers and acquisitions of companies comparable to each entity;
- the likelihood of achieving a liquidity event for the holders of our common stock and the LLC entity's units, such as an initial public offering or sale of the company given prevailing market conditions; and
- any recent contemporaneous valuations of our common stock and the LLC entity's common units prepared in accordance with methodologies outlined in the Practice Aid.

***Valuation methodologies***

Our and the LLC entity's valuations of common stock and common units, respectively, were prepared utilizing the discounted cash flow, or DCF, method, the guideline public company, or GPC, method, the option-pricing method, or OPM, the probability-weighted expected return method, or PWERM, and a hybrid of the PWERM and OPM, which we refer to as the hybrid method:

- *Discounted Cash Flow Method.* Under the DCF method, projected cash flows are converted to present value by applying a discount rate based on an estimated cost of equity or an estimated cost of debt. The cost of equity is estimated based on rates of return required by venture capital investors. An estimated cost of debt is applied when future cash flows are adjusted for the probability of success in clinical trials.
- *Guideline Public Company Method.* Under the GPC method, our future value in an initial public offering is estimated based on a comparison to clinical-stage companies which have completed initial public offerings.
- *Option Pricing Method.* Under the OPM, common and preferred stock and common and preferred units are valued by creating a series of call options with exercise prices based on the liquidation preferences and conversion terms of each equity class. Under this method, common stock and common units only have value if the funds available for distribution to common stock or common unit holders exceed the value of the liquidation preferences at the time of a liquidity event, such as a strategic sale or merger. Under the OPM, the value of one security, such as preferred stock or

preferred units, is used to determine the value of the equity and the corresponding value of the common stock or common units.

- *Probability-Weighted Expected Return Method.* The PWERM is a scenario-based analysis that estimates the value per share based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available to each entity, as well as the economic and control rights of each equity class.

- *Hybrid Method.* The hybrid method is a PWERM where the equity value in one of the scenarios is calculated using the OPM. In the hybrid method used by each entity, three types of future-event scenarios were considered: an initial public offering, a sale and dissolution. Each entity used the OPM to allocate equity value for the unspecified liquidity event.

    - The enterprise value for the initial public offering and sale scenarios was determined using a market approach. Under the market approach, each entity estimated enterprise value using the guideline public company method. The guideline public company method includes comparisons to publicly traded companies in the relevant industry that recently completed initial public offerings. For the sale scenarios, each entity estimated a premium to the initial public offering value. The enterprise values are discounted back to the valuation date at an appropriate risk-adjusted discount rate.

    - The enterprise value for the unspecified liquidity event was determined using the OPM.

***Contemporaneous valuation of the LLC entity common units as of March 31, 2014***

The LLC entity performed a contemporaneous valuation of its common units on March 31, 2014 to coincide with its preparation for a potential initial public offering. Pursuant to the American Institute of Certified Public Accountants Practice Aid, the PWERM is appropriate when the time to a liquidity event is short, making the range of possible future outcomes relatively easy to predict. Given the proximity to a potential initial public offering, the LLC entity chose to use the PWERM. The LLC entity considered three scenarios: an equity financing, a preferred equity financing followed by a favorable sale, and an unfavorable sale with no preferred equity financing.

***Contemporaneous valuation of the LLC entity common units as of May 1, 2015***

The LLC entity performed a valuation of its common units on May 1, 2015 to coincide with its planned issuance of certain equity grants. The LLC entity estimated the value of its equity using the DCF method under the income approach. The LLC entity allocated equity value among its preferred and common units using the hybrid method. The hybrid method is a form of PWERM which uses the OPM for at least one scenario. The LLC entity considered two scenarios: the OPM and a second scenario in which Actavis plc exercises its option to acquire the Relamorelin Company.

***Retrospective valuation of the LLC entity common units as of July 15, 2015.***

The LLC entity performed a retrospective valuation of its common units as of July 15, 2015 to coincide with the amendment of the Ipsen warrant. The LLC entity estimated the value of the equity of the Relamorelin Company using the DCF method under the income approach. For Rhythm Pharmaceuticals, Inc., the LLC entity estimated the value of the equity using the OPM. The LLC entity allocated equity value on its preferred and common units using a hybrid method. The hybrid method for the LLC entity considered two scenarios: the OPM and a second scenario in which Actavis plc exercises its option to acquire the Relamorelin Company.

***Contemporaneous valuation of the Rhythm Pharmaceuticals, Inc. common stock as of August 3, 2015.***

We performed a contemporaneous valuation of our common stock as of August 3, 2015 to coincide with the first tranche closing of our series A preferred stock financing. We valued our equity and allocated equity value using a hybrid backsolve method. The backsolve calculation reconciled to the price of our series A preferred stock. The hybrid method considered initial public offering and OPM scenarios. We relied on the GPC method to estimate equity value in the initial public offering scenario. This valuation also included a contemporaneous valuation of the Series A Investor Right/Obligation and Series A Investor Option to invest in the second tranche of our series A preferred stock financing. We valued the Series A Investor Right/Obligation as the probability-weighted present value of the future benefit associated with the second tranche investment. We valued the Series A Investor Option using the Black-Scholes option model.

***Contemporaneous valuation of LLC entity common units as of September 30, 2015***

The LLC entity performed a contemporaneous valuation of its common units as of September 30, 2015 to coincide with the quarterly revaluation of non-employee stock grants. The LLC entity estimated the value of the equity of the Relamorelin Company using the DCF method under the income approach. For Rhythm Pharmaceuticals, Inc., the LLC entity estimated the value of the equity using the hybrid method. Two scenarios were considered: an initial public offering and an OPM. The LLC entity allocated equity value on its preferred and common units using the hybrid method. The LLC entity considered three scenarios in its hybrid method: a distribution of Rhythm Pharmaceuticals, Inc. common shares based on an initial public offering equity value for Rhythm Pharmaceuticals, Inc., a distribution of common shares based on an OPM equity value for Rhythm Pharmaceuticals, Inc., and a scenario in which Actavis plc exercises its option to acquire the Relamorelin Company. This valuation also included a contemporaneous valuation of the Series A Investor Right/Obligation and Series A Investor Option to invest in the second tranche of our series A preferred stock financing. We valued the forward contract as the probability-weighted present value of the future benefit associated with the second tranche investment. We valued the option to invest in the second tranche using the Black-Scholes option model.

***Contemporaneous valuation of LLC entity common units as of October 31, 2015***

The LLC entity performed a contemporaneous valuation of its common units as of October 31, 2015 to coincide with its planned issuance of certain equity grants. The LLC entity estimated the value of the equity of the Relamorelin Company using the DCF method under the income approach. For Rhythm Pharmaceuticals, Inc., the LLC entity estimated the value of the equity using the hybrid method. Two scenarios were considered: an initial public offering and an OPM. The LLC entity allocated equity value on its preferred and common units assuming separate distributions for Rhythm Pharmaceuticals, Inc. and the Relamorelin Company. For Rhythm Pharmaceuticals, Inc., the LLC entity considered a hybrid method with two scenarios: a distribution of Rhythm Pharmaceuticals, Inc. common shares based on an initial public offering and a distribution of common shares based on an OPM equity value. For the Relamrolin Company, the LLC entity allocated equity value based on the probability-weighted present value of an exercise by Actavis plc of its option to acquire the Relamorelin Company.

***Contemporaneous valuation of the Rhythm Pharmaceuticals, Inc. common stock as of October 31, 2015.***

We performed a contemporaneous valuation of our common stock as of October 31, 2015 to coincide with the planned issuance of certain equity grants. We valued our equity and allocated equity value using a hybrid backsolve method. The backsolve calculation reconciled to the price of our series A preferred stock. The hybrid method considered initial public offering and OPM scenarios. We relied on the GPC method to estimate equity value in the initial public offering scenario.

***Contemporaneous valuation of the Rhythm Pharmaceuticals, Inc. Series A Investor Right/Obligation as of December 1, 2015.***

We performed a contemporaneous valuation of the Series A Investor Right/Obligation to invest in the second tranche of our series A preferred stock financing. This valuation coincided with our Series A Second Tranche Closing on December 1, 2015. We valued the Series A Investor Right/Obligation as the benefit associated with the second tranche investment. The benefit is a function of the difference between the fair value of the Series A shares and the Series A Investor Right/Obligation exercise price on the date of closing and the number of shares acquired. We estimated the fair value of the Series A Investor Right/Obligation as the probability weighted average of two scenarios: an IPO and a remain-private scenario.

***Contemporaneous valuation of LLC entity common units as of December 31, 2015***

The LLC entity performed a contemporaneous valuation of its common units as of December 31, 2015 to coincide with the quarterly revaluation of non-employee stock grants. The LLC entity estimated the value of the equity of the Relamorelin Company using the DCF method under the income approach. For Rhythm Pharmaceuticals, Inc., the LLC entity estimated the value of the equity using the hybrid method. Two scenarios were considered: an initial public offering and an OPM. The LLC entity allocated equity value on its preferred and common units using the hybrid method. The LLC entity allocated equity value on its preferred and common units assuming separate distributions for Rhythm Pharmaceuticals, Inc. and the Relamorelin Company. For Rhythm Pharmaceuticals, Inc., the LLC entity considered a hybrid method with two scenarios: a distribution of Rhythm Pharmaceuticals, Inc. common shares based on an initial public offering and a distribution of common shares based on an OPM equity value. For the Relamrolin Company, the LLC entity allocated equity value based on the probability-weighted present value of an exercise by Actavis plc of its option to acquire the Relamorelin Company.

***Contemporaneous valuation of the Rhythm Pharmaceuticals, Inc. common stock as of December 31, 2015.***

We performed a contemporaneous valuation of our common stock as of December 31, 2015 to coincide with the issuance of certain equity grants. We valued our equity and allocated equity value using a hybrid backsolve method. The backsolve calculation reconciled to the price of our series A preferred stock. The hybrid method considered initial public offering and OPM scenarios. We relied on the GPC method to estimate equity value in the initial public offering scenario.

**Results of Operations**

***Comparison of years ended December 31, 2014 and December 31, 2015***

The following table summarizes our results of operations for the years ended December 31, 2014 and 2015, together with the changes in those items in dollars and as a percentage:

| | Year Ended December 31, | | Change | |
|---|---|---|---|---|
| | 2014 | 2015 | $ | % |
| | (in thousands) | | | |
| **Statement of Operations Data:** | | | | |
| Operating Expenses: | | | | |
| Research and development | $ 5,280 | $ 7,148 | $ 1,868 | 35% |
| General and administrative | 1,213 | 3,425 | 2,212 | 182% |
| Total operating expenses | 6,493 | 10,573 | 4,080 | 63% |
| Loss from operations | (6,493) | (10,573) | (4,080) | (63)% |
| Other income (loss) | — | (500) | (500) | 100% |
| Net loss and comprehensive loss | $ (6,493) | $ (11,073) | $ 4,580 | 71% |

*Research and development expense.* Research and development expense increased by $1.9 million to $7.1 million in 2015 from $5.3 million in 2014, an increase of 35%. The increase was primarily due to non-cash expenses in 2015 of $0.9 million related to the modification of warrants made in connection with a license agreement and $0.1 million in stock compensation in the last quarter of 2015. Our research and development costs increased as we initiated additional new clinical trials for setmelanotide and hired additional personnel in the clinical operations department, as well as an increase in the overall proportion of research and development expenses allocated to us in 2015.

*General and administrative expense.* General and administrative expense increased by $2.2 million to $3.4 million in 2015 from $1.2 million in 2014, an increase of 182%. The increase in general and administrative expense was primarily attributable to an increase in legal fees, accounting fees and other consulting costs, as well as an increase in the overall proportion of general and administrative expenses allocated to us in 2015.

**Liquidity and Capital Resources**

As of December 31, 2015, our existing cash and cash equivalents were approximately $34.9 million. We have received capital contributions from the Predecessor Company, the Relamorelin Company and the LLC entity from time to time as needed. In August 2015 and December 2015, we received aggregate gross proceeds of $40.0 million from the sale of our series A preferred stock.

***Cash flows***

The following table provides information regarding our cash flows for the years ended December 31, 2014 and December 31, 2015:

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2014 | 2015 | Change |
| | | (in thousands) | |
| Net cash provided by (used in): | | | |
| Operating activities | $ (7,508) | $ (6,977) | 531 |
| Investing activities | — | (17) | (17) |
| Financing activities | 7,419 | 41,711 | 34,292 |
| Net increase (decrease) in cash and cash equivalents | $ (89) | $ 34,717 | $ 34,806 |

***Net cash used in 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 used in operating activities was $7.5 million for the year ended December 31, 2014, and consisted primarily of a net loss of $6.5 million adjusted for non-cash items, which was comprised of stock-based compensation. The significant items in the change in operating assets and liabilities include a decrease in accounts payable, accrued expenses and other current liabilities of $1.3 million offset by a decrease of approximately $0.2 million in prepaid expenses and other current assets.

Net cash used in operating activities was $7.0 million for the year ended December 31, 2015, and consisted primarily of a net loss of $9.4 million adjusted for non-cash items, which were comprised of stock-based compensation, warrant amendment expense and mark to market revaluation of the Series A Investor Right/Obligation. The significant items in the change in operating assets and liabilities include an increase in accounts payable, accrued expenses and other current liabilities of $4.7 million offset by an increase of approximately $2.1 million in deferred issuance costs and prepaid expenses and other current assets.

***Net cash used in investing activities***

Net cash used in investing activities represent our design costs incurred related to our facility lease.

***Net cash provided by financing activities***

Net cash provided by financing activities in prior periods consisted primarily of capital contributions from the LLC entity in the form of cash transfers, and shared costs incurred by the Relamorelin Company and the Predecessor Company or paid by the Relamorelin Company or the Predecessor Company on our behalf.

Net cash provided by financing activities was $7.4 million for the year ended December 31, 2014, consisting of $5.7 million of cash transfers and $1.7 million of shared costs and costs paid on our behalf.

Net cash provided by financing activities was $41.7 million for the year ended December 31, 2015, consisting of $39.6 million of net proceeds from the issuance of series A preferred stock and an equity contribution of $2.1 million.

***Funding requirements***

We expect our expenses to increase in connection with our ongoing activities, particularly as we continue the clinical development of and seek marketing approval for setmelanotide. In addition, if we obtain marketing approval for setmelanotide, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution to the extent that such sales, marketing and distribution are not the responsibility of potential collaborators. We expect to incur additional costs associated with operating as an independent company, and upon the closing of this offering, operating as a public company.

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 through at least the end of 2018. We may need to obtain substantial additional funding in connection with our research and development activities and any continuing operations thereafter. If we are unable to raise capital when needed or on favorable terms, we would be forced to delay, reduce or eliminate our research and development programs or future commercialization efforts.

Our future capital requirements will depend on many factors, including:

- the scope, progress, results and costs of clinical trials for our setmelanotide program;
- the costs, timing and outcome of regulatory review of our setmelanotide program;
- the obligations owed to Ipsen pursuant to our license agreement;
- the extent to which we acquire or in-license other product candidates and technologies;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims; and
- our ability to establish and maintain additional collaborations on favorable terms, if at all.

Developing our setmelanotide program is a time-consuming, expensive and uncertain process that may take years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, setmelanotide, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of setmelanotide that we do not expect to be commercially available for several years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all.

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. In August 2015 and December 2015, respectively, we issued 25,000,000 and 15,000,000, shares of series A preferred stock, respectively, at a price of $1.00 per share, resulting in gross proceeds of $40.0 million.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt financing, if available, involves agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

If we raise funds through additional collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our setmelanotide program 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 our setmelanotide program that we would otherwise prefer to develop and market ourselves.

***Contractual obligations***

We enter into agreements in the normal course of business with CROs and CMOs for clinical trials and clinical supply manufacturing and with vendors for clinical research studies and other services and products for operating purposes. We do not classify these as contractual obligations where the contracts are cancelable at any time by us, generally upon 30 days' prior written notice to the vendor.

Milestone and royalty payments associated with our license agreement with Ipsen have not been included as contractual obligations as we cannot reasonably estimate if or when they will occur. Under the terms of the Ipsen license agreement, assuming that setmelanotide is successfully developed, receives regulatory approval and is commercialized, Ipsen may receive aggregate payments of up to $40.0 million upon the achievement of certain development and commercial milestones under the license agreement and royalties on future product sales. The majority of the aggregate payments under the Ipsen license agreement are for milestones that may be achieved no earlier than first commercial sale of setmelanotide. In the event that we enter into a sublicense agreement, we will make payments to Ipsen, depending on the date of the sublicense agreement, ranging from 10% to 20% of all revenues actually received under the sublicense agreement.

We are not a party to the lease for the facility shared with the Relamorelin Company. In November 2015, we entered into a Lease Agreement for an office facility at 500 Boylston Street, Boston, Massachusetts. The lease term is expected to commence in April 2016 and has a term of 5 years with a five year renewal option to extend the lease.

Future minimum payments under the operating lease agreements as of December 31, 2015, are as follows:

| | Operating Lease |
|---|---|
| 2016 | $ 215 |
| 2017 | 292 |
| 2018 | 299 |
| 2019 | 306 |
| 2020 | 312 |
| Thereafter | 79 |
| Total | 1,503 |

**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.

**Quantitative and Qualitative Disclosures about Market Risk**

We are not exposed to market risk related to changes in interest rates or foreign currency exchange rates.

**JOBS Act**

In April 2012, the JOBS Act was enacted. Section 107 of the JOBS Act provides that an "emerging growth company," or 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 newly implemented accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this extended transition period and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies.

We are in the process of evaluating the benefits of relying on other exemptions and reduced reporting requirements under the JOBS Act. Subject to certain conditions, as an EGC, we intend to rely on certain of these exemptions, including without limitation, (i) 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 and (ii) complying 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, known as the auditor discussion and analysis. We will remain an EGC until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenue of at least $1.0 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior December 31st, and (2) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period.

# BUSINESS

## Overview

We are a biopharmaceutical company focused on the development and commercialization of peptide therapeutics for the treatment of rare genetic deficiencies that result in life-threatening metabolic disorders. Our lead peptide product candidate is setmelanotide, a potent, first-in-class melanocortin-4 receptor, or MC4R, agonist for the treatment of rare genetic disorders of obesity. We believe setmelanotide, for which we have exclusive worldwide rights, has the potential to serve as replacement therapy for the treatment of melanocortin-4, or MC4, pathway deficiencies. MC4 pathway deficiencies result in the body lacking satiety signals, which, in turn, leads to intense feelings of hunger and to obesity. Our development efforts are initially focused on two of these deficiencies, Prader-Willi Syndrome, or PWS, and pro-opiomelanocortin, or POMC, deficiency obesity, for which there are currently no effective or approved treatments. We believe that the MC4 pathway is a compelling target for treating these genetic disorders because of its critical role in regulating appetite and weight by promoting satiety and weight control, and that peptide therapeutics are uniquely suited for activating this target. We have demonstrated initial proof of concept in our ongoing Phase 2 clinical trial in POMC deficiency obesity, a disorder of extreme and unrelenting appetite and obesity, in which setmelanotide dramatically reduced both weight and hunger. The U.S. Food and Drug Administration, or FDA, has acknowledged the importance of these results by giving our POMC deficiency obesity program a breakthrough therapy designation. We are also conducting a Phase 2 clinical trial in PWS, and we expect results from these clinical trials by the third quarter of 2016. These clinical trials expand upon previous setmelanotide clinical trials which enrolled over 200 general obese patients and demonstrated significant weight loss with good tolerability.

Obesity is epidemic in the United States and current treatment approaches have demonstrated limited long-term success for most obese patients. We are taking a different approach to obesity drug development by leveraging new understanding of the genetic causes of severe obesity to develop innovative therapies that we believe have the potential for compelling efficacy. Setmelanotide's unique mechanism of action at MC4R enables a targeted approach to treating very severe obesity in patients with specific, monogenic defects in the MC4 signaling pathway. By restoring impaired function in this pathway, setmelanotide can serve as replacement therapy for genetic deficiencies, with the potential for dramatic improvements in weight and appetite. We believe we are at the forefront of improving treatment outcomes in subtypes of severe obesity that are caused by genetically-defined defects in the MC4 pathway.

Setmelanotide activates MC4R, which is part of the key pathway that can independently regulate energy homeostasis, which refers to the body's energy balance, and appetite. The critical role of the MC4 pathway in weight regulation was validated with the discovery that single genetic defects along this pathway result in early onset and severe obesity. An expanding set of severe obesity genetic defects are now identified that involve genes in the pathway which are either upstream of MC4R—specifically PWS, POMC deficiency obesity and leptin receptor, or LepR, deficiency obesity—or genes that are downstream of MC4R or affect MC4R itself. We are focusing setmelanotide clinical development on patients with upstream genetic defects in which obesity is life-threatening but the downstream MC4 pathway is fully functional. We believe setmelanotide has the potential to restore lost activity in the MC4 pathway by bypassing the defects upstream of MC4R, and activating the MC4 pathway below such defects. In this way, setmelanotide may serve as replacement therapy to reestablish weight and appetite control in patients with these genetic disorders.

The first generation of MC4R agonists were predominantly small molecules that failed in clinical trials due to safety issues, particularly increases in blood pressure, in addition to having limited efficacy. In contrast, setmelanotide, a novel eight amino acid peptide, retains the specificity and functionality of the naturally occurring hormone that activates MC4R, and has exhibited preliminary evidence of efficacy without adversely affecting blood pressure in our Phase 1 and ongoing Phase 2 clinical trials.

Setmelanotide, which is administered by subcutaneous, or SC, injection, is currently in Phase 2 clinical trials for two genetic disorders of obesity, PWS and POMC deficiency obesity.

PWS is a life-threatening, orphan disease with prevalence estimates ranging from approximately one in 8,000 to one in 52,000, and with at least 8,000 diagnosed patients in the United States. A hallmark of PWS is severe hyperphagia, an overriding physiological drive to eat, leading to severe obesity and other complications. For PWS patients, hyperphagia and obesity are the greatest threats to their health, and these patients are likely to die prematurely as a result of choking, stomach rupture, or from complications caused by morbid obesity. Only one drug, a growth hormone, is approved for treating short stature in PWS, however there is currently no approved treatment for the obesity and hyperphagia associated with PWS. Recent scientific studies identify deficiencies affecting the MC4 pathway as the cause of the obesity and associated symptoms of PWS, such as hyperphagia, and suggest that an MC4R agonist can directly impact these symptoms. We have initiated a Phase 2 clinical trial to evaluate the effects of up to 10 weeks of treatment on weight reduction and PWS-specific food-related behavior in obese patients with PWS. We expect to enroll approximately 36 patients and report results from this trial by the third quarter of 2016. The FDA's existing guidance on developing products for weight management addresses treatments for the population of general obesity patients, which requires treatment of large and diverse populations of general obese patients. In contrast, based on our consultations with the FDA, we believe we can pursue a faster path to approval of setmelanotide for our genetically-targeted patient populations, such as PWS patients, based on a clinical study program tailored in size, duration, and preclinical prerequisites appropriate for the smaller size and nature of these rare populations.

In September 2015, the FDA granted our orphan drug designation request for setmelanotide for the treatment of PWS. As described more fully under the caption "Business—Regulatory Matters," if a product with orphan drug designation receives the first FDA approval for that disease, the product will receive orphan drug exclusivity. The benefit of orphan drug exclusivity is that the FDA will not approve another sponsor's marketing application for the same drug for the same indication for seven years, except in certain limited circumstances.

POMC deficiency obesity is a life-threatening, ultra-rare orphan disease, with approximately 50 patients reported to date. Ultra-rare orphan diseases are generally categorized as those that affect fewer than 20 patients per million. We believe that our addressable patient population for this disorder is approximately 100 to 500 patients worldwide. Like PWS, patients with POMC deficiency have unrelenting hyperphagia that begins in infancy and they develop severe, early onset obesity. POMC deficiency obesity results from two different homozygous genetic defects, both upstream of MC4R. Currently, there is no approved treatment for the obesity and hyperphagia associated with this genetic disorder. We have initiated a Phase 2, open-label, clinical trial to evaluate the effects of up to 12 weeks of setmelanotide treatment on weight reduction and hunger in approximately six patients with POMC deficiency obesity. To date, only two patients are enrolled and receiving treatment in this trial. The initial patient in this trial lost 25.8 kg, or 56.9 lbs., over the first 13 weeks of treatment, immediately regained weight on withdrawal of drug, and resumed outstanding weight loss upon re-initiation of setmelanotide treatment in a long-term extension and has lost 51 kgs, or 112 lbs., over 42 weeks. Our second POMC patient has been treated for 18 weeks and has lost 28.8 kgs, or 63.5 lbs. We expect to report results from this trial in the first half of 2016. Based on the FDA's breakthrough therapy designation, we have an expedited path to approval of setmelanotide for POMC deficiency obesity. In April 2016, the FDA granted our orphan drug designation request for setmelanotide for the treatment of POMC deficiency obesity.

We are also focusing on additional upstream MC4 pathway deficiencies for which setmelanotide can function as replacement therapy and provide activation of the pathway downstream of the defect, promoting satiety and weight control. We intend to expand setmelanotide development to include two other upstream disorders, POMC heterozygous deficiency obesity and LepR deficiency obesity, for which there is also high unmet need and no approved or effective therapy. POMC heterozygous deficiency obesity results from the loss of function in one of two POMC genes. This condition is more prevalent than

POMC deficiency obesity, affecting an estimated 2% of patients with severe, early onset obesity. We estimate that the addressable patient population may consist of approximately 4,000 patients in the United States. LepR deficiency obesity is an ultra-rare orphan disease resulting in extreme hyperphagia and severe early onset obesity, with an estimated prevalence of 1% of subjects with severe, early onset obesity. Like other deficiencies upstream in the MC4 pathway, LepR deficiency results in loss of function in the MC4 pathway. We estimate actual prevalence could be between 500 and 2,000 patients worldwide.

We intend to initiate Phase 2 clinical trials for both POMC heterozygous deficiency obesity and LepR deficiency obesity in the first half of 2016 to evaluate the effects of setmelanotide on hunger and weight in these disorders. We expect to report results from these trials in the first half of 2017. We also intend to pursue faster paths to approval for setmelanotide for both POMC heterozygous deficiency obesity and LepR deficiency obesity.

Our company was founded in November 2008 by former biopharmaceutical executives who have successfully developed, commercialized and in-licensed innovative pharmaceutical products, and we have subsequently expanded our senior management team to further broaden our team's experience in developing, registering and commercializing new drugs. In addition, our scientific advisory board, or SAB, members have extensive clinical expertise in obesity, endocrinology and metabolic diseases. We intend to leverage the experience of our senior management team and SAB to develop and commercialize setmelanotide. Through our senior management team's network of industry contacts, we will continue to evaluate additional product candidate licensing and acquisition opportunities. We are backed by strong and dedicated investors that include both private equity venture capital funds and public healthcare investment funds. Our investors include MPM Capital, New Enterprise Associates, Third Rock Ventures, Ipsen, Pfizer Venture Investments, OrbiMed, Deerfield Management and two public healthcare investment funds.

**Our Strategy**

Our goal is to be a leader in developing and commercializing targeted therapies for genetic deficiencies that result in life-threatening metabolic disorders. The key components of our strategy are:

- **Rapidly develop setmelanotide for rare genetic disorders of obesity caused by MC4 pathway deficiencies.** We are aiming to dramatically improve patient outcomes in severe obesity by targeting setmelanotide's mechanism of action to the treatment of patients with genetically-defined defects in the MC4 pathway. We intend to pursue faster paths to approval for setmelanotide in these orphan disorders. We believe that focusing on these rare life-threatening conditions enables us to rapidly develop and commercialize setmelanotide using relatively small clinical trials.

- **Advance setmelanotide for PWS and POMC deficiency obesity as our first indications in upstream MC4 pathway deficiencies.** We are conducting two Phase 2 clinical trials in patients with upstream genetic deficiencies affecting the MC4 pathway, one for the treatment of patients with PWS, and one for the treatment of patients with POMC deficiency obesity. We intend to work with the FDA, based on our breakthrough therapy designation, to rapidly transition our POMC deficiency obesity study to a pivotal registration study. We believe the PWS Phase 2 trial will be sufficient to enable initiation of Phase 3. Based on FDA consultations to date, we intend to pursue indications for both PWS and POMC deficiency obesity.

- **Expand setmelanotide development to additional upstream MC4 pathway deficiencies, including POMC heterozygous deficiency obesity and LepR deficiency obesity.** We believe we can leverage our mechanistic understanding of and experience with PWS and POMC deficiency obesity to advance development of setmelanotide for other upstream MC4 pathway deficiencies. Accordingly, we intend to initiate Phase 2 clinical trials in the first half of 2016 for the rare genetic disorders, POMC heterozygous deficiency obesity and LepR deficiency obesity.

- **Leverage the broad experience of our team in clinical and commercial drug development, and product acquisitions.** We will apply our team's extensive experience in developing and commercializing innovative medicines to the development and launch of setmelanotide. In addition, we intend to identify and acquire new pipeline programs in related diseases. Our team is complemented by highly experienced external consultants and collaborators in the areas of drug discovery, development, manufacturing and regulatory approval.

- **Commercialize setmelanotide for rare disease indications in core strategic markets.** We intend to establish our own commercial sales and marketing organization in the United States and other core strategic markets. We expect this sales organization will target physicians treating these rare genetic disorders of obesity, including pediatric and adult endocrinologists. We believe that building our own commercial operations will deliver a greater return on our product investment than if we license the rights to commercialize these products to third parties. We may also selectively establish partnerships in markets outside the United States for sales, marketing and distribution.

**Our Product Pipeline**

The following chart depicts key information regarding the development of our product candidate, setmelanotide, including the indications we are pursuing within MC4 pathway deficiencies, the current state of development and our expected upcoming milestones:


**Market Overview**

***Recent Advances in the Understanding of Obesity***

Diet and lifestyle modifications remain the cornerstones of weight loss therapy, but they are limited by a lack of long-term success for most obese patients. The long-term efficacy of these interventions and for existing drug therapies is often limited by the counter-regulatory mechanisms of the human body. For example, with diet induced weight loss, typically there is a large decrease in energy expenditure that offsets that weight loss. Accordingly, the discovery that the MC4 pathway can regulate both appetite and energy homeostasis separately—helping maintain the balance between food intake and energy burn—has defined an important target for therapeutics. In addition, recent advances in genetic studies have identified several diseases that are the result of genetic defects affecting the MC4 pathway, most notably PWS. With a deeper understanding of this critical signaling pathway, we are taking a different approach to drug development by focusing on specific genetic deficiencies affecting the MC4 pathway. We believe that this approach has the potential to provide dramatic improvements in weight and appetite by restoring lost function in the MC4 pathway.

***Obesity Caused by Rare Genetic Deficiencies Affecting the MC4 Pathway***

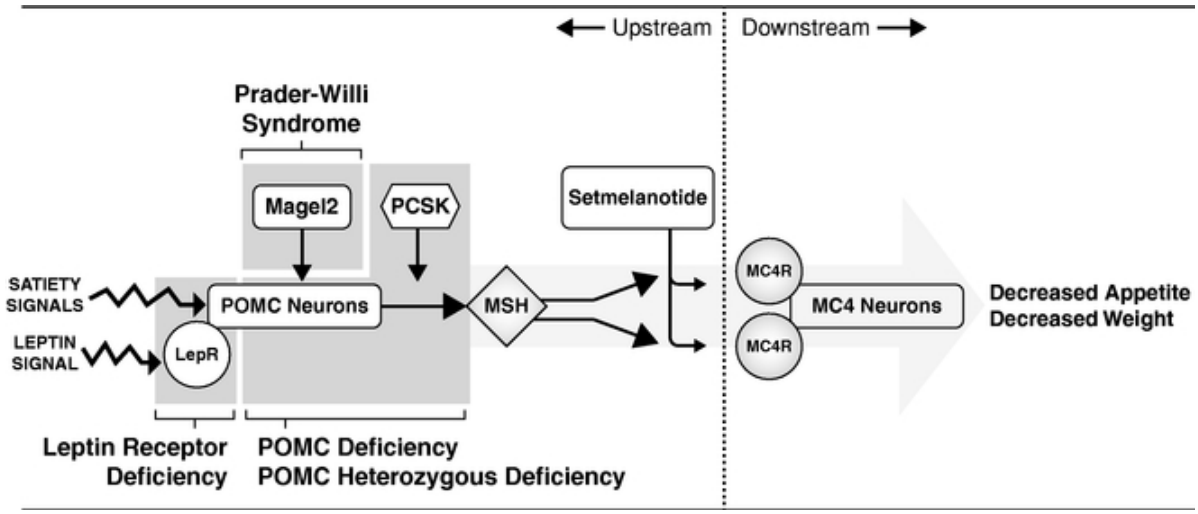
The MC4 pathway serves a critical role in the control of food intake and energy balance. Its activity decreases appetite and caloric intake, and increases energy expenditure, with MC4R acting as the final step in the signaling pathway. This important hypothalamic, or lower brainstem, pathway has been the focus of extensive investigation for many years, and we have a deep understanding of this mechanism, which is unlike the targets of most other anti-obesity therapies. As a result, we believe we can better predict the efficacy and safety profile expected from modulating this target. The critical role of the MC4 pathway in weight regulation was also validated with the discovery that single genetic defects at many points in this pathway result in early onset, severe obesity.

The MC4 pathway is illustrated in the figure below, from the activation of the pathway to the resulting decrease in appetite and weight. Under normal conditions, POMC neurons are activated by brain satiety signals, including those resulting from the hormone leptin acting through LepR. POMC neurons produce a protein, which is specifically processed by the proprotein convertase subtilisin/kexin 1, or PCSK, enzyme, into melanocyte stimulating hormone, or MSH, the natural ligand, or activator, for MC4R. When genetic mutations disrupt this pathway, the result is hyperphagia and severe obesity.

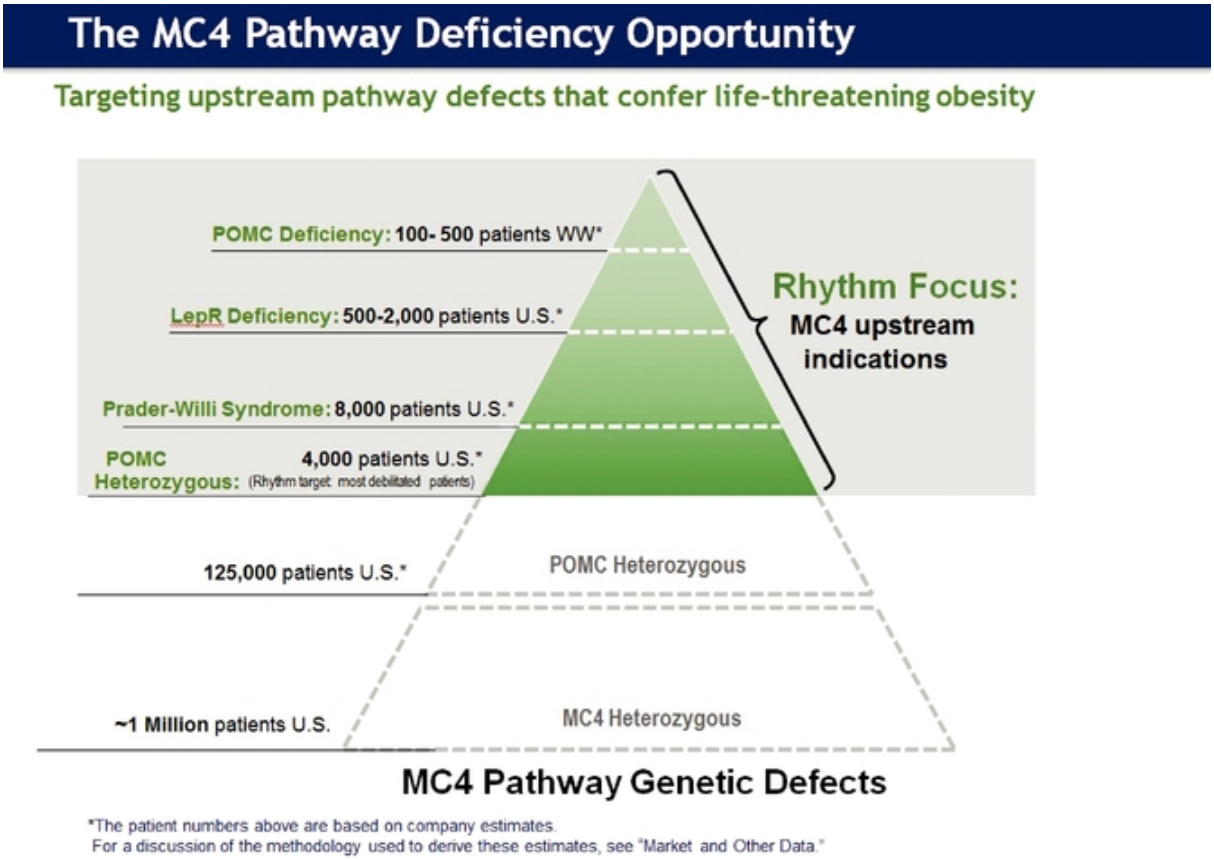
We are focused on developing setmelanotide for genetic disorders that result in defects in this pathway that are upstream of MC4R. Setmelanotide has the potential to restore lost function in this pathway by activating the intact MC4 pathway below the genetic defect. In this way, we believe setmelanotide acts as replacement therapy.

The figure below also illustrates some of the upstream MC4 pathway deficiencies that are the targets of our development activities.

**Setmelanotide Development Targets: Upstream Deficiencies Affecting the MC4 Pathway**



The figure below summarizes the indications on which we are focusing for the development of setmelanotide, including the estimated number of patients within these indications.




***Obesity Caused by Upstream Genetic Deficiencies Affecting the MC4 Pathway***

*Prader-Willi Syndrome*

PWS, a form of genetic MC4 pathway deficiency, is an orphan disease with prevalence estimates ranging from approximately one in 8,000 to one in 52,000, with at least 8,000 diagnosed patients in the United States. A hallmark of the disease is severe hyperphagia, which leads to severe obesity as well as behavioral and metabolic complications. PWS patients also exhibit intellectual disability and delayed growth.

The genetics of PWS are complex, involving several genes on chromosome 15 that are not properly expressed. Recent discoveries highlight that a defect in one of these, the melanoma antigen family L2, or MAGEL2, gene, impairs the function of POMC neurons, which are key components of the MC4 pathway. Studies have suggested a link between defects in MAGEL2 in humans with obesity, hyperphagia, autism spectrum disorders, reduced intellectual ability and most other aspects of behavior and metabolism associated with PWS. Unraveling the function of the MAGEL2 gene in MAGEL2 deficient mice revealed functionally defective POMC neurons which otherwise would promote satiety by activating MC4. We believe this inherent defect in POMC neurons can be bypassed, as MAGEL2 deficient mice are responsive to therapeutic activation of MC4R, resulting in control of appetite. These published findings support the rationale for the treatment of PWS patients with an MC4R agonist.

For PWS patients, obesity and hyperphagia are the greatest threats to their health and these patients often die at a young age from related complications. Hyperphagia has a significant negative impact on the

patients' quality of life as well as causing obesity and a range of associated co-morbidities. Normal satiety, or the feeling of fullness after eating, does not exist in a person with PWS. The physiological drive to eat is so powerful and overwhelming that most PWS patients will go to great lengths to eat large quantities of food, in some cases even if it is spoiled, indigestible or unpalatable to others.

Hyperphagia impairs PWS patients' ability to live independently, requiring costly and constant supervision to prevent overeating. Without supervision, PWS patients are likely to die prematurely as a result of choking, stomach rupture or tissue necrosis, or from complications caused by morbid obesity, such as heart failure and respiratory failure. While a small number of PWS patients are cared for in costly group homes, the majority of PWS patients are cared for in their family homes until at least age 30 and their caregivers undertake substantial efforts to create physical barriers to eating. These efforts result in extremely stressful environments as caregivers often place locks and alarms on cabinets and refrigerators that contain food to impede PWS patients' efforts to obtain food at all times. The typical annual cost of treating a PWS patient can exceed $100,000, excluding the often significant costs of drug therapies related to other medical and psychological conditions, and the costs of any lost time from work experienced by their families due to responsibilities related to the care of a PWS patient.

Currently there is no approved treatment for PWS, and most research to date has targeted the treatment of specific symptoms. For many individuals affected by the disorder, the elimination of some of the most difficult aspects of the syndrome, such as hyperphagia and obesity, would represent a significant improvement in quality of life and provide the potential opportunity for patients to live independently.

*POMC Deficiency Obesity*

POMC deficiency obesity is an ultra-rare genetic disorder, with severe, early onset obesity and profound hyperphagia as hallmark clinical features. Patients with POMC deficiency obesity are extremely rare, with approximately 50 POMC deficient patients reported to date. There are approximately 50 patients with POMC deficiency obesity noted in a series of published case reports, each mostly reporting a single or small number of patients. However, we believe our addressable patient population for this disorder is approximately 100 to 500 patients worldwide, as most of the reported cases are from a small number of academic research centers, and because genetic testing for POMC deficiency is often unavailable and rarely performed. Based on discussion with experts in rare diseases, we also believe the number of diagnosed cases will increase several-fold with increased awareness of this disorder and the availability of new treatments.

POMC deficiency obesity results from two different homozygous genetic defects that result either in loss of POMC neuropeptide synthesis or disruption of the required processing of the POMC neuropeptide product to MSH. The first is a loss of function defect in the POMC gene itself, where the lack of the POMC gene expression and absence of POMC-derived neuropeptides ultimately results in lack of stimulation of downstream MC4 neurons. This form of POMC deficiency may also be associated with hormonal deficiencies, such as hypoadrenalism, and red hair and fair skin are also common in this disorder. The second genetic defect results from the need for the POMC protein product to be processed by the PCSK processing enzyme. The end result of these two defects is the lack of MSH that binds and activates MC4R, leading to severe, early onset obesity and profound hyperphagia.

POMC deficiency is characterized by voracious infant feeding, rapid weight gain and severe obesity, often in early infancy, with patients demonstrating remarkable weight increases many standard deviations from the normal weight growth curves. These patients and their caregivers have attempted to stabilize body weight with the help of psychologists, nutritionists and pediatric endocrinologists, all without significant success. Currently there are no approved or effective therapies for POMC deficiency obesity.

*Other Upstream Genetic Defects in the MC4 Pathway*

In addition to PWS and POMC deficiency obesity, there are other upstream, MC4 pathway deficiencies for which we believe setmelanotide may function as replacement therapy, including defects that partially modulate POMC activity, such as POMC heterozygous deficiency obesity, and deficiencies farther upstream from POMC and MC4R, such as LepR deficiency obesity.

POMC Heterozygous Deficiency Obesity

POMC heterozygous deficiency obesity is caused by the loss of one of the two genetic copies of either the gene for POMC or the gene for PCSK. Animal models support that such heterozygous deficiency in the critical MC4 pathway can result in a strong predisposition to severe obesity. The effect of heterozygous deficiency was first demonstrated in MC4R heterozygous deficiency obesity. POMC heterozygous deficiency obesity also results in a strong predisposition to obesity, though the epidemiology and clinical characterization of these patients is less well known. An estimated 2% of severe, early onset obesity patients have POMC heterozygous deficiency obesity, which is much more common than the ultra-rare POMC deficiency obesity in which both copies of either the POMC or PCSK genes are impaired. Based on epidemiology studies in small cohorts of patients with severe early onset obesity and adult obesity, we estimate that the addressable patient population for POMC heterozygous deficiency obesity is approximately 4,000 patients in the United States.

It is thought that the obesity of patients with POMC heterozygous deficiency may have a broader spectrum of severity than POMC deficiency obesity. Therefore, our focus will be on the most severe of the POMC heterozygous deficiency obesity patients, with our estimate that only a small percentage of these patients will benefit from targeted therapy with substantial efficacy. As a result, we will be initiating another Phase 2 proof of concept trial in the first half of 2016 to confirm our hypothesis that the subset of patients with very severe POMC heterozygous deficiency obesity may be highly responsive to setmelanotide therapy. There is currently no approved therapy for POMC heterozygous deficiency obesity.

Leptin Receptor Deficiency Obesity

LepR deficiency causes hyperphagia and severe, early onset obesity and accounts for an estimated prevalence of 1% of subjects with severe, early onset obesity, defined here as a body mass index, or BMI, of greater than 40 $kg/m^2$. Additional clinical symptoms include mild alterations in immune function and delayed puberty. Based on epidemiology studies in small cohorts of patients with severe, early onset obesity, we estimate the prevalence of LepR deficiency obesity is between 500 and 2,000 patients in the United States. Under normal conditions, leptin can activate POMC neurons and the downstream MC4, but like other deficiencies upstream in the MC4 pathway, lack of signaling at LepR results in loss of function in the MC4 pathway. Therefore, patients with this indication also manifest intense hyperphagia and severe obesity from early childhood. Currently there is no approved therapy for LepR deficiency obesity.

***Obesity Caused by Downstream Genetic Deficiencies Affecting the MC4 Pathway***

*MC4 Heterozygous Deficiency Obesity*

Consistent with POMC heterozygous deficiency, MC4 heterozygous deficiency results in a strong predisposition to early onset and severe obesity. MC4 heterozygous deficiency is the most common genetic cause of obesity. An epidemiological study performed in Europe in 2006 reported a prevalence of 2.6% of genetic defects in the MC4 gene in the obese population with a BMI of greater than 30 $kg/m^2$, and studies performed in both Europe and the United States, in 2000 and 2003, respectively, reported a prevalence of up to 4% of these genetic defects in more severely obese populations with a BMI of greater than 35 $kg/m^2$. These prevalence rates suggest that there are approximately one million people in the United States with obesity caused by a mutation of the MC4R gene.

These patients have a higher risk than the general population for early onset obesity and complications such as diabetes. Furthermore, MC4 deficiency may offset the beneficial effects of diet and exercise for sustained weight loss, limiting treatment options for these individuals. There are currently no approved therapies for MC4 heterozygous deficiency obesity.

We believe that MC4 heterozygous deficient patients can respond to setmelanotide therapy by increasing activity that results from the one normal copy of the MC4 gene. However, while setmelanotide has demonstrated strong efficacy in a Phase 1b trial for the treatment of MC4 heterozygous deficiency obesity patients, we are focusing instead on genetic defects that are upstream of the MC4 receptor. This is because we believe that many of these upstream genetic disorders cause even more severe, often life-threatening obesity, and because setmelanotide has the potential to restore lost function in these upstream disorders, delivering more compelling efficacy.

***Limitations of Current Therapies***

Although drugs approved for general obesity can potentially be used in obese patients with MC4 pathway deficiencies, all have limited efficacy and aim to treat symptoms rather than addressing the underlying biology. There are currently no treatments approved specifically for obesity and hyperphagia in either PWS or POMC deficiency obesity. Bariatric surgery is contraindicated in patients with PWS, and is also not an option in patients with other upstream defects in the MC4 pathway who have severe obesity and hyperphagia.

**Setmelanotide: A First-in-Class Phase 2 MC4R Agonist**

Setmelanotide is a potent, first-in-class, MC4R agonist peptide administered by daily SC injection. Setmelanotide is in Phase 2 clinical trials for the treatment of rare genetic disorders of obesity caused by MC4 pathway deficiencies. MC4R modulates a key pathway in humans that regulates energy homeostasis and food intake. The critical role of the MC4 pathway in weight regulation was validated with the discovery that single genetic defects in this pathway result in early onset and severe obesity. The first generation MC4R agonists were small molecules that failed primarily due to safety issues, particularly increases in blood pressure, as well as limited efficacy. In contrast, setmelanotide is a peptide that retains the specificity and functionality of the naturally occurring hormone that activates MC4R. Previous setmelanotide clinical trials have enrolled over 200 general obese patients and demonstrated significant weight loss with good tolerability.

***Clinical Development in Rare Genetic Disorders of Obesity Caused by MC4 Pathway Deficiencies***

We have initiated two Phase 2 clinical trials of setmelanotide for the treatment of rare genetic disorders of obesity, one for POMC deficiency obesity and one for PWS. Based on FDA consultations to date, and the FDA awarding breakthrough therapy designation to our POMC deficiency obesity program, we believe we can seek indications for obesity caused by defects in the MC4 pathway with faster paths to approval, as compared to typical obesity drug candidates, because of the high unmet need and rare prevalence of these disorders. We expect to use the results of our Phase 2 clinical trials of setmelanotide in these indications as the foundation for proceeding directly to pivotal clinical trials. We also plan to initiate Phase 2 proof of concept trials in the first half of 2016 in POMC heterozygous deficiency obesity patients and in patients with LepR deficiency obesity, additional populations with genetically-defined deficiencies upstream in the MC4 pathway.

We believe our initial data in POMC deficiency obesity provides strong proof of concept that setmelanotide, when targeted for deficiencies affecting the upstream portion of the MC4 pathway, can provide compelling efficacy for weight loss and decrease in hunger. Proof of concept for substantial weight loss in patients with downstream, heterozygous mutations of the MC4R gene itself has also been achieved in a small, four week, Phase 1b clinical trial. While these downstream defects are not our current area of focus, we believe they provide evidence for substantial, though lesser, weight loss efficacy in a setting of a partially defective, downstream defect in the MC4 pathway, which impacts a significantly larger population.

To date, most of our completed setmelanotide clinical trials have been in the general obese population. These trials have provided additional safety data as we focus on rare, genetic segments of obesity. In these trials, setmelanotide has generally achieved weight loss without adversely increasing blood pressure. These trials in the general obese population are described separately below.

The following table outlines our ongoing and planned setmelanotide studies in rare genetic disorders of obesity.

***Setmelanotide: Phase 2 Clinical Programs in Genetically Defined Obesity***

| | POMC Deficiency | PWS | POMC Heterozygous Deficiency | LepR Deficiency |
|---|---|---|---|---|
| **Clinical trial phase** | Phase 2 | Phase 2 | Phase 2 | Phase 2 |
| **Status** | Initiated 1Q2015 | Initiated 4Q2014 | Initiating 1H2016 | Initiating 1H2016 |
| **Treatment groups**[(1)] | Setmelanotide | Setmelanotide, Placebo | Setmelanotide, Placebo | Setmelanotide |
| **Number of patients**[(2)] | 4 - 6[(5)] | 36 | 4 - 6[(3)] | 2 - 6[(3)] |
| **Patient demographics** | Adult, POMC deficient[(4)] | PWS Adults/Adolescents | POMC heterozygous deficiency with morbid obesity | LepR deficient |
| **Duration of treatment** | 12 weeks + Extensions | 8 - 10 weeks | 12 weeks | 12 weeks + Extensions |
| **Location** | Germany, United States | United States | United States, Germany, France, UK | United States, Germany, France, UK |

(1) Setmelanotide, administered as once daily SC injection.

(2) Approximate number of patients anticipated to be enrolled.

(3) Either a separate trial or additional patients included in the ongoing POMC deficiency trial in some locations.

(4) POMC deficiency includes homozygous deficiency in either the POMC or PCSK genes; pediatric patients will also be studied when applicable.

(5) We intend to transition this study to a pivotal registration study.

***Setmelanotide: Clinical Development Program in Genetically Defined Obesity***

*Phase 2 Clinical Development in POMC Deficiency Obesity*

We have initiated a Phase 2 proof of concept, open label clinical trial in patients with POMC deficiency obesity. With two patients in this trial, we believe that we have provided proof of concept for the compelling efficacy of setmelanotide in this disorder.

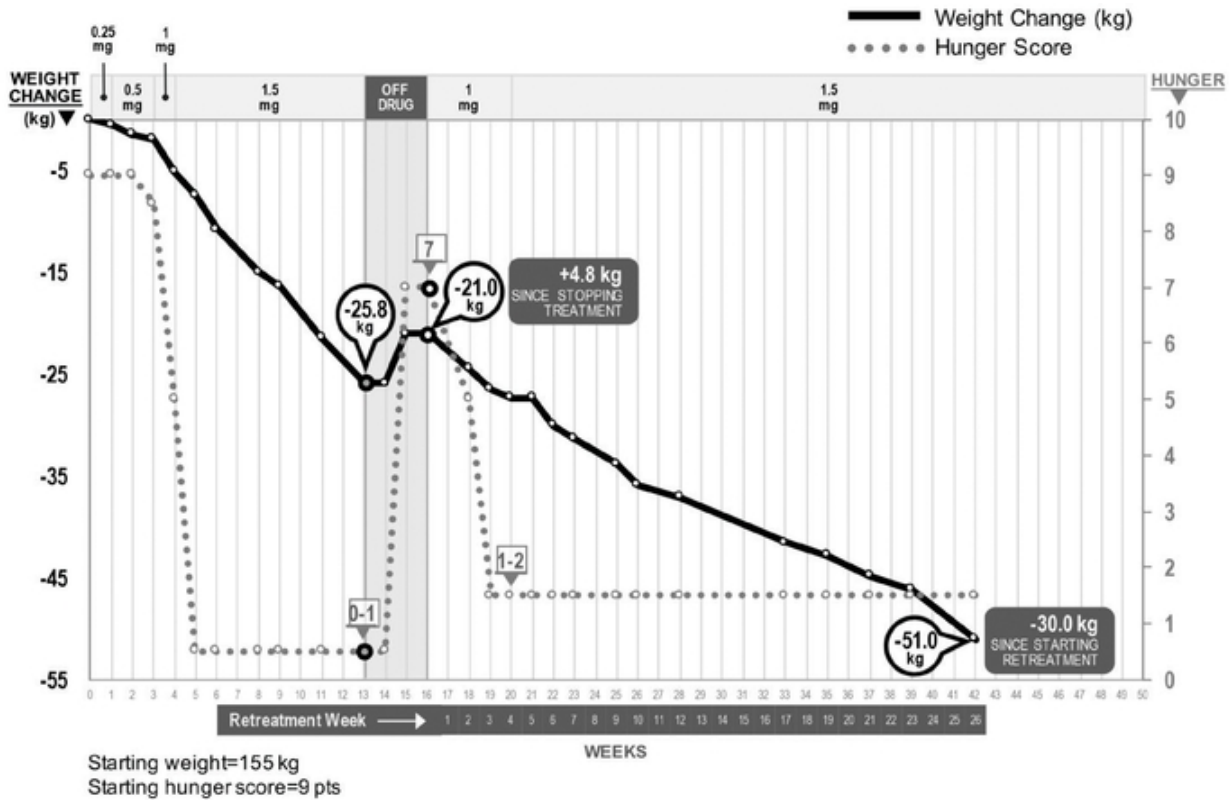
The first setmelanotide-treated patient was a 20-year old woman, who at three months of age experienced the onset of obesity and severe hyperphagia. In spite of enormous efforts, the patient was never able to stabilize her body weight, except for brief periods, and she has remained severely hyperphagic. Ahead of our trial, the patient's self-reported trial hunger score was eight or nine out of ten points, representing extreme hunger. She was entered into the trial at adulthood because of her severe obesity, with a baseline weight of 155 kg, or 341.7 lbs., and a BMI of 49.8 $kg/m^2$, and her significant risk of comorbidities and a reduced life expectancy.

The trial, a 13-week, open label, ascending dose Phase 2 trial, was approved by the German Federal Institute for Drugs and Medical Devices, with open-label one year extensions, and will include approximately four to six patients with genetically confirmed POMC deficiency obesity. After efficacy-gated dose escalation, aiming for weekly weight loss of approximately two kg, or 4.4 lbs., per week, the primary endpoint is weight loss, with other key endpoints including hunger score, body composition, insulin and glucose parameters, metabolic and cardiovascular risk factors, energy expenditure and general safety and tolerability. If the FDA agrees, we plan to transition this study into a pivotal registration study, and to initiate a similar companion Phase 2/3 pivotal registration study in the United States under the United States investigational new drug application, or IND.

After 13 weeks of therapy, with approximately the first four weeks at sub-therapeutic doses, our initial patient demonstrated weight loss of 25.8 kg, or 56.9 lbs., representing 16.7% of her initial body weight, with approximately two to three kilograms per week of weight loss demonstrated at the highest 1.5 mg/day dose. Hunger scores measured on a scale of 0, representing no hunger, to 10, or extreme hunger, mirrored the rate of weight loss, moving from scores of eight to nine prior to our trial, or close to extreme hunger, to zero to one, representing close to no hunger, as the patient was treated with increasing doses of setmelanotide. After termination of the 13-week main trial, the patient underwent a three-week withdrawal period off drug and regained 4.8 kg, or 10.6 lbs., with a return to moderate to severe hunger. Following approval to restart setmelanotide treatment, there was an immediate reduction of hunger and subsequently a continuation of body weight loss, taking total weight loss in the trial to 51.0 kg, or 112.4 lbs., representing 32.9% of her initial body weight. There was no apparent difference in the rate of weight loss during the extension phase versus the main trial.

The results for this patient are shown in the figure below.

**Initial Patient in the Setmelanotide Phase 2 Trial[(1)]**



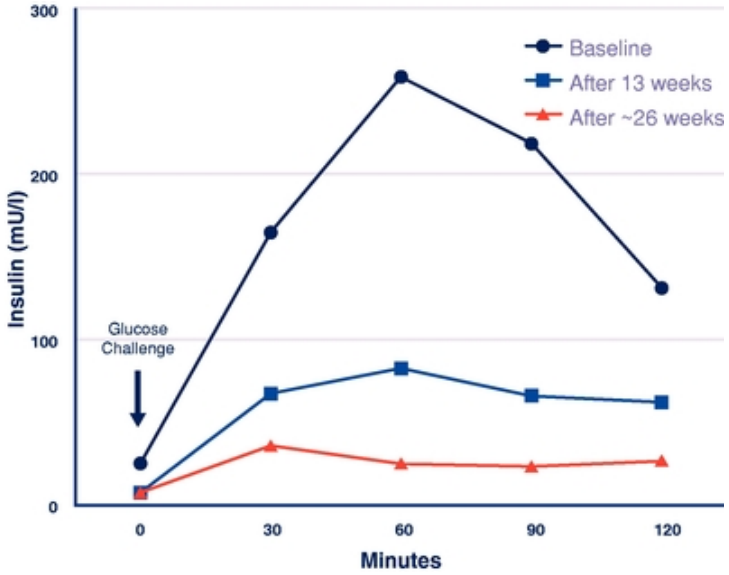

(1) Thirteen weeks of initial treatment, three weeks withdrawal from drug, then re-treatment in a long-term extension. Daily setmelanotide dose adjustments over time are indicated at the top of the panel.

In general, diet induced weight loss in patients with general obesity is accompanied by significant counter-regulatory effects, including reductions in energy expenditure and increases in hunger. These lead to weight regain in the majority of patients. In contrast, the initial patient in our trial did not manifest these counter-regulatory responses, even after six months of therapy and a tremendous reduction of body weight. This data supports an effect of setmelanotide on energy expenditure independent from the profound effects on hyperphagia, corroborating results from previous trials of setmelanotide in patients with general

obesity. Also of note, the reduction of body weight was mainly due to a loss of body fat mass, and lean body mass was not greatly altered. In this initial patient, setmelanotide was also associated with excellent tolerability, additional favorable changes in cardiovascular risk parameters, or lipids, and improvements in blood pressure and heart rate.

MC4R activation also causes improvements in glucose and insulin parameters in animal models, independent of weight loss. As shown in the figure below, for the initial patient in our POMC deficiency proof of concept trial, setmelanotide demonstrated a marked improvement in insulin resistance during treatment. While weight loss likely played an important role in this improvement, we believe the independent effect of MC4R agonism may also have contributed.

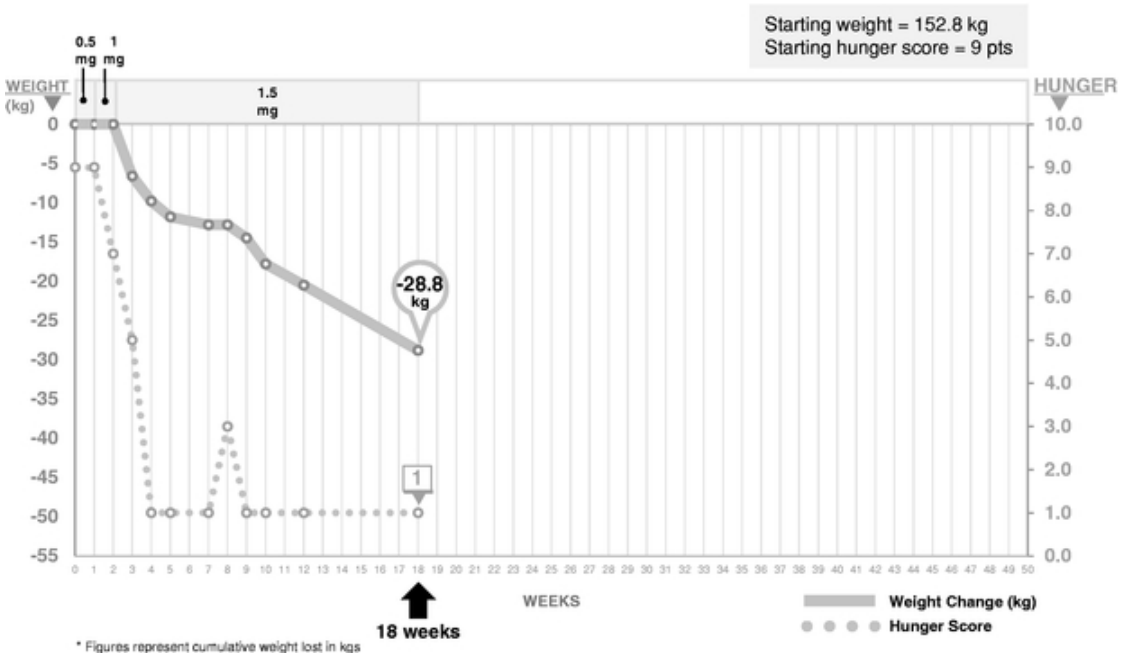
**Setmelanotide Treatment Effects on Insulin Resistance (Insulin Response in Oral Glucose Tolerance Test) at Baseline, After 13 Weeks of Treatment (Phase 1), and at Approximately 26 Weeks (Phase 2) During the Long-term Extension for our Initial Patient**




We have reported results from treatment of a second setmelanotide patient with POMC deficiency obesity. The second patient is a 26 year old woman who also experienced early onset of obesity and severe hyperphagia. Like the first patient, in spite of significant efforts, she was never able to stabilize her body weight, and she has remained severely hyperphagic. Ahead of our trial, the patient's self reported trial hunger score was nine out of ten points, representing extreme hunger, and her weight and BMI at study entry were 152.8 kg, or 336.9 lbs., and 54.1 kg/m$^2$, respectively.

After 18 weeks of therapy, with approximately the first two weeks at sub-therapeutic doses, our second patient demonstrated weight loss of 28.8 kg, or 63.5 lbs., representing 18.8% of her initial body weight, with approximately two to three kilograms per week of weight loss demonstrated at the highest 1.5 mg/day dose. Hunger scores mirrored the rate of weight loss, moving from scores of nine prior to our trial, or close to extreme hunger, to one on most weeks, representing close to no hunger, as the patient was treated with increasing doses of setmelanotide. As this patient completed the initial 13 weeks of this trial, she has also entered into long-term extensions.

**Our Second Patient in the Setmelanotide Phase 2 Trial[(1)]**




(1) Eighteen weeks of initial treatment; daily setmelanotide dose adjustments over time are indicated at the top of the panel.

Setmelanotide was generally well-tolerated in the POMC deficiency obesity Phase 2 trial, with few adverse experiences, all mild and infrequent, and all previously reported in other clinical trials. These included reduced appetite and tanning of skin and nevi, or moles, intermittent and mild injection site reactions, and in rare instances tiredness, dry mouth, and gastrointestinal symptoms.

The results from the initial patients in our POMC deficiency proof of concept trial are compelling, but these data have limitations due to open label treatment. However the strong treatment effect is supported by these patients' long histories of weight gain and severe hyperphagia prior to treatment, and a strong dose response in the dose escalation phase. More importantly, the biology of this disorder has been well studied, and the clinical responses in these patients were strongly predicted by the deep understanding of the role of the MC4 pathway in appetite and weight regulation. Lastly, the interruption of treatment effectively allowed the first patient to serve as her own control, demonstrating an immediate and rapid increase in hunger and weight after a short-term treatment withdrawal, and a rapid response to re-treatment, thereby further demonstrating the strong effect of setmelanotide. The approximately nine months of treatment of our first patient also supports the ability of setmelanotide to be effective for longer treatment periods.

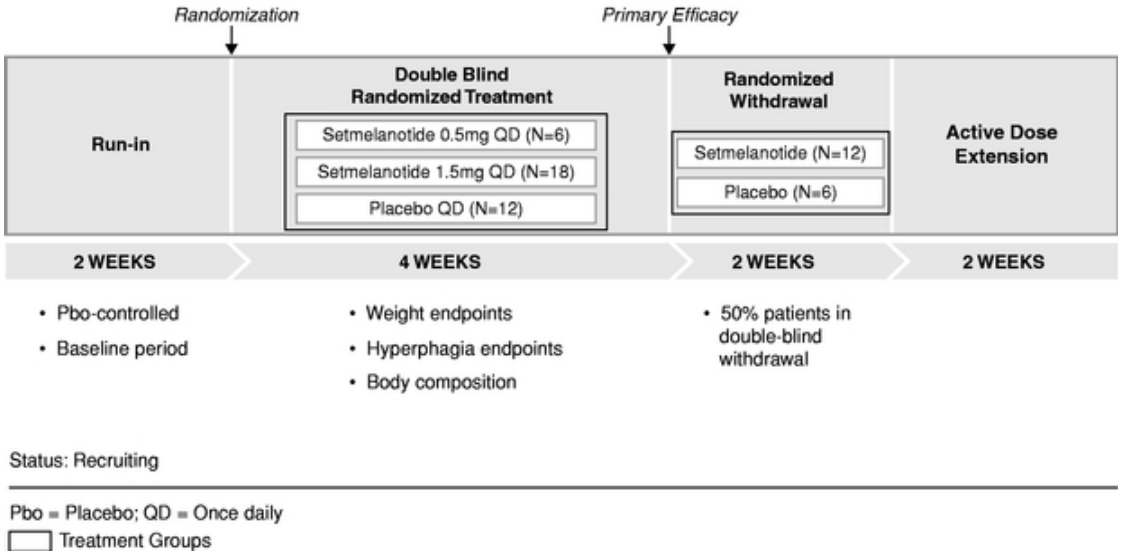
This initial proof of concept data provide support for the belief that setmelanotide will restore activity in patients with upstream defects in the MC4 pathway, will help patients lose weight, and will reduce hyperphagia. Since POMC deficiency obesity patients are considered to be a population of patients closely related to PWS patients, as each may share a defect in the POMC neurons, we can hypothesize a productive therapeutic response of PWS patients to treatment with setmelanotide. Similarly, we would expect efficacy in other upstream MC4 pathway genetic disorders, such as POMC heterozygous deficiency obesity and LepR deficiency obesity.

*Phase 2 Clinical Development in PWS Patients*

We have initiated a Phase 2 proof of concept, double-blind, placebo-controlled, randomized clinical trial in PWS which is expected to enroll approximately 36 patients for up to eight weeks of active setmelanotide treatment, administered once daily by SC injection. This trial is intended to assess the effects of setmelanotide on weight reduction, and PWS-specific hyperphagia-related behaviors, as well as determine its safety profile. Based on the data from this Phase 2 clinical trial, we believe we may be positioned to proceed into a Phase 3 clinical trial that could lead to an indication for the treatment of PWS patients.

The trial includes a two-week run-in period, a four-week double blind, randomized, placebo-controlled parallel group main trial, a two-week double-blind, randomized, placebo-controlled withdrawal period during which half of the trial patients will be randomized to either continue to receive their therapy or be switched to the alternative therapy, from active to placebo, or vice versa, and a two-week active-treatment extension. There will be three treatment arms in the trial: placebo; 0.5 mg of setmelanotide SC injection daily, which we expect to be a subtherapeutic dose; and 1.5 mg of setmelanotide SC injection daily. Patients recruited are 16 to 65 years of age, with a BMI of greater than 27 $kg/m^2$, and with a genetically confirmed diagnosis of PWS. Patients recruited will live in a family setting, rather than in a group home. Primary endpoints for the trial include safety and tolerability, weight loss and hyperphagia, with hyperphagia to be measured by a PWS hyperphagia observer reported outcome, or ORO, questionnaire. Secondary endpoints include dual-energy x-ray absorptiometry measurements, pharmacokinetics, effects during the randomized withdrawal stage, and effects on quality of life and food-related and other behaviors. Evaluations will be assessed at the end of the four-week double blind parallel group stage, as well as after the withdrawal stage and open label extension.

**10-week Double Blind, Placebo-controlled Parallel Group Study with a Randomized Placebo-controlled Withdrawal Phase and Open Label Active Treatment Extension**



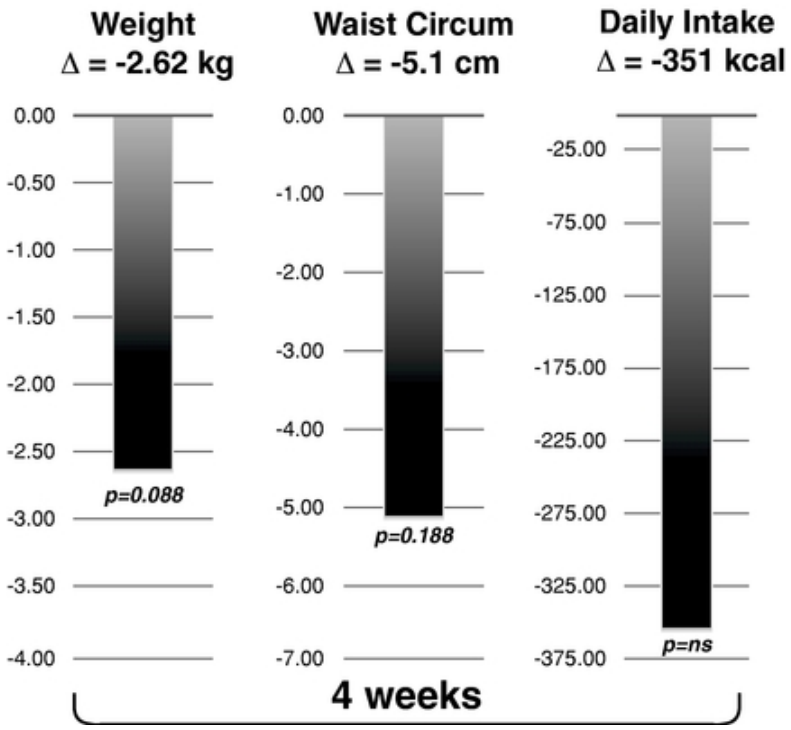

*Phase 1b Clinical Development in Patients with Heterozygous MC4R Gene Mutations*

Early studies in downstream MC4 pathway defects demonstrated good efficacy and tolerability, and served as a foundation for potentially greater efficacy in upstream MC4 pathway deficiencies. We established proof of concept for efficacy of setmelanotide in patients with an MC4R heterozygous genetic mutation in one cohort of patients in our Phase 1b clinical trial. This clinical trial was a double-blind, placebo-controlled, randomized Phase 1b clinical trial designed to evaluate the effect of setmelanotide on weight loss and safety in obese patients with a heterozygous mutation of the MC4R gene. The initial cohort

of eight patients was treated for four weeks with setmelanotide or placebo. The setmelanotide group showed weight loss of 3.48 kg, or 7.67 lbs., approximately 2.62 kg, or 5.78 lbs., more weight loss than the placebo group, which showed weight loss of 0.85 kg, or 1.87 lbs. Other parameters supporting weight loss were also positively impacted by setmelanotide. We believe that these results support the hypothesis that setmelanotide can be effective in weight loss in MC4R deficient patients, and provide evidence of the minimum expected treatment effect of setmelanotide, approximately 0.9 kg/week, or 1.98 lbs./week, of weight loss over four weeks, even in a situation where setmelanotide's action is on a downstream MC4 pathway that is no longer fully functional due to heterozygous MC4R mutations.

The following figure depicts preliminary data relating to our setmelanotide Phase 1b clinical trial in MC4 heterozygous deficiency obesity patients:

**Setmelanotide Phase 1b Trial MC4 Heterozygous Patients: Placebo Subtracted Differences[(1)(2)]**




(1) Over four weeks of treatment with setmelanotide 0.01 mg/kg/day by continuous SC infusion.

(2) Preliminary data.

*Planned Phase 2 Clinical Development in POMC Heterozygous Deficiency Obesity*

We plan to initiate a Phase 2 clinical trial in patients who are severely obese, or whose BMI is equal to or greater than 40kg/m$^2$, and who are POMC heterozygous deficient. These patients have a heterozygous genetic mutation of the POMC or PCSK gene resulting in full or partial loss of POMC signaling to the downstream MC4R. The purpose of this trial is to provide proof of concept that severely impaired POMC heterozygous deficiency obesity patients will also demonstrate significant weight loss, similar to though possibly of less magnitude as that seen in patients with POMC deficiency obesity. We plan to initiate this clinical trial in the first half of 2016 and to conduct this clinical trial at sites in the United States and Europe.

*Planned Phase 2 Clinical Development in LepR Deficiency Obesity*

Leptin's role in obesity has been elucidated by characterization of severely obese people with homozygous mutations that impair the activity of leptin, including disruption of signaling at the LepR. We plan to study these patients with homozygous loss-of-function LepR mutations starting in the first half of 2016. We may amend our ongoing Phase 2 clinical trial in POMC deficiency obesity to include this related genetically-defined population of severely obese patients, or we may initiate a separate Phase 2 clinical trial. The purpose of this trial is to provide proof of concept that severely impaired LepR deficient patients will also demonstrate significant weight loss similar to that seen in patients with POMC deficiency obesity. We anticipate that in this trial, approximately two to six patients, identified by genetic diagnostic screening, will receive setmelanotide by once daily SC injection for approximately twelve weeks of treatment.

In general, we consider a p-value of 0.05 to be significant. P-values are an indication of statistical significance reflecting the probability of an observation occurring due to chance alone. However, it is not possible to determine a p-value for very small sample sizes, such as one- or two-patient trials.

***Setmelanotide Clinical Development in General Obesity Patients***

Initial studies in general obesity provided preliminary evidence of efficacy and of good tolerability, and served as a foundation for the clinical development of setmelanotide. The general obese population is defined as having a BMI of equal to or greater than 30 $kg/m^2$. In our initial clinical trials, we delivered setmelanotide with continuous SC infusion using an insulin pump. More recently, our administration has been converted to a once daily SC injectable formulation.

The table below summarizes the setmelanotide studies that we conducted in general obese patients under IND # 112595 submitted to the Division of Metabolism and Endocrinology Products, Center for Drug Evaluation and Research, FDA.

**Completed and Ongoing Setmelanotide Clinical Trials in the General Obese Population**

| Short Study Title | Population | Route of Administration Formulation | Number of Subjects/ Patients | Status |
|---|---|---|---|---|
| RM-493-001<br>Single Ascending Dose Trial in Healthy Obese Volunteers | Obesity | Continuous infusion | 36 healthy obese subjects | Completed |
| RM-493-002<br>Multiple Ascending Dose Trial in Healthy Obese Volunteers | Obesity | Continuous infusion SC injection | 54 healthy obese subjects | Completed |
| RM-493-003<br>A Phase 2a Weight Loss Trial in Obese Patients using Continuous Infusion | Obesity | Continuous infusion | 74 healthy obese subjects | Completed, data analysis still ongoing |
| RM-493-005<br>Pre-screening Genetic Testing of Healthy Obese Volunteers | N/A Genetic Screening Study | N/A | N/A | Completed |
| RM-493-006<br>A Phase 1b 2-Period Crossover Trial on Energy Expenditure in Obese Subjects | Energy Expenditure In Obesity | Continuous infusion | 12 healthy obese subjects | Completed |
| RM-493-008<br>A Phase 1 Pharmacokinetic Trial of New Once-daily Injectable Formulations | PK/Obesity | SC injection | 12 healthy obese subjects | Completed |
| RM-493-009<br>A Staged, Phase 1b/Phase 2a Pharmacokinetic/Weight Loss Trial in Obese Patients using Sub-Cutaneous Injection | Obesity | SC injection | 99 healthy obese subjects | Completed, data analysis still ongoing |

SC=subcutaneous. Completed=completed the in-life portion of the trial.

*Phase 2 Clinical Development in the General Obese Population*

Phase 2 Clinical Trial Results with Continuous Infusion

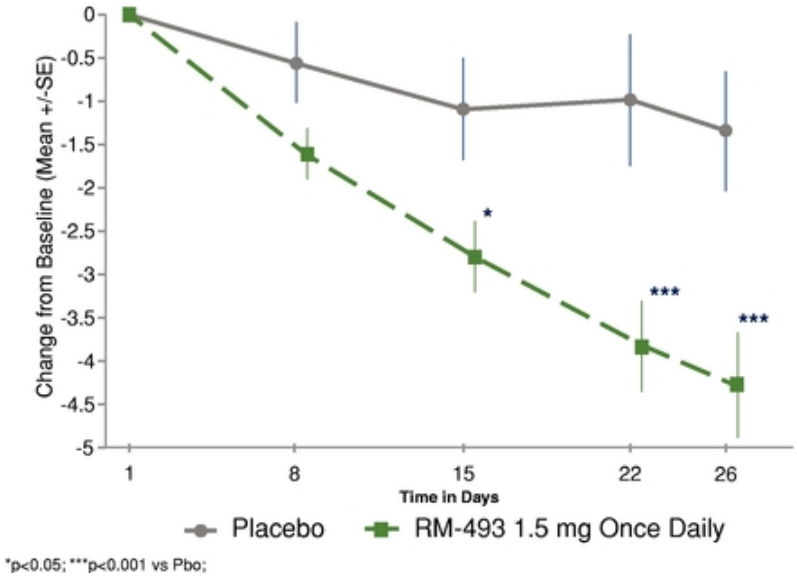
We conducted our first Phase 2 clinical trial of setmelanotide using continuous SC infusion. This was a 12-week, Phase 2 proof of concept clinical trial in general obese patients using the SC continuous infusion formulation of setmelanotide delivered by an insulin pump. We treated approximately 74 obese patients with either placebo or setmelanotide at a dose of 1.0 mg over 24 hours, with no serious adverse events or other safety indications from laboratory tests, electrocardiograms or vital signs noted in the setmelanotide treatment group. Evaluation of the pharmacokinetics, or blood levels, of setmelanotide from this clinical trial demonstrated that the SC continuous infusion method of drug administration was not optimal. A large number of patients did not meet the target pharmacokinetic exposures of setmelanotide that our Phase 1 clinical trials suggested would have to be achieved in order for setmelanotide to show efficacy. This clinical trial did not demonstrate statistically significant weight loss compared to the placebo. We believe patients in this clinical trial lacked adequate exposure to setmelanotide, and concluded that all future efficacy clinical trials in obese patients should be conducted using the SC injection method. This belief is based on a prior Phase 1 pharmacokinetic trial, which used the SC injection formulation and demonstrated higher pharmacokinetic exposures in obese patients.

Phase 2 Clinical Trial with Once Daily SC Injection

We conducted a three-stage, randomized, placebo-controlled, Phase 2 12-week general obesity trial, with approximately 100 obese patients, using our SC injection formulation, primarily with once daily dosing. We designed this Phase 2 clinical trial to bridge between the earlier clinical trials that used continuous infusion and all future clinical trials that use the formulation for once daily SC injection. Therefore, the primary purpose of the staged approach in this trial was to assess if appropriate pharmacokinetic targets could be reached with the new SC injection, first in an in-patient setting similar to the setting where robust weight loss was demonstrated in the Phase 1 general obesity trial, and then in an outpatient setting.

Overall, setmelanotide demonstrated significant weight loss over 12-weeks in all stages, with placebo subtracted weight loss, or the difference in the amount of weight gained or lost in the active treatment group as compared to the placebo treatment group, from baseline of –2.78% to –4.69% and p-values ranging from 0.005 to <0.001. However, weight loss was more pronounced and consistent in the cohort treated with an initial four-week, observed dosing, inpatient period, for which overall placebo subtracted weight loss from baseline at week 12 ranged from –3.87% to –4.69%, all with p-values of less than 0.005, with the most pronounced weight loss during the in-patient period. The once daily SC injection formulation also showed consistent and predictable pharmacokinetic measurements during the four-week inpatient interval in the first stage, validating the characteristics of the SC injection formulation. However, this trial demonstrated challenges in drug administration and compliance when administered in an outpatient setting in the general obese population.

**Setmelanotide Phase 2 SC Injection Trial 4-week In-Patient Dosing Period: Percent Weight Loss for Setmelanotide 1.5 mg/day SC injection vs Placebo over 26 days of Observed Dosing**



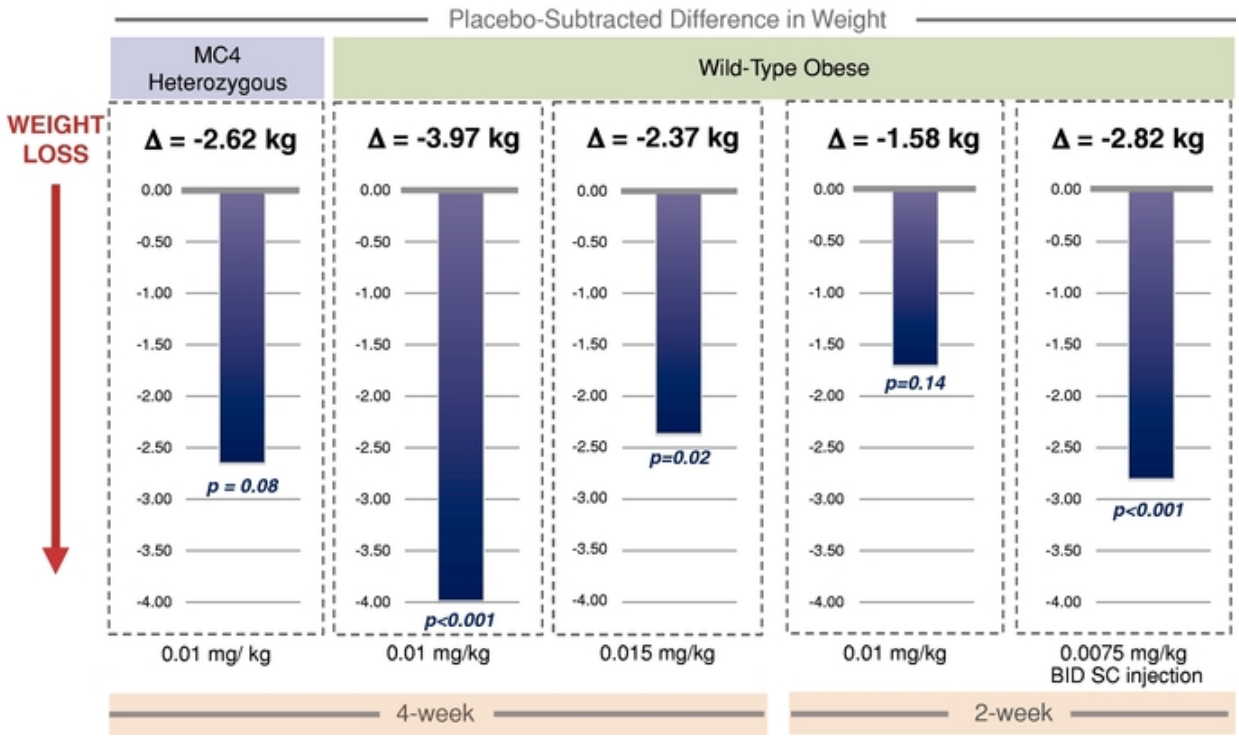

*Phase 1 Clinical Development in the General Obese Population*

We have completed a Phase 1 single-ascending dose, or SAD, clinical trial of setmelanotide, as well as five cohorts in a Phase 1 multiple-ascending dose, or MAD, clinical trial of setmelanotide. Both clinical trials were in healthy obese volunteers, and included a double-blind, placebo-controlled randomized escalating dose design. Subjects received treatment in these Phase 1 clinical trials for one day at doses up to 0.1 mg/kg/day, which is a total daily dose of approximately 10 mg/day, and for up to 28 days at doses up to 0.015 mg/kg/day, which is a total daily dose of approximately 1.5 mg/day.

In the SAD clinical trial, our extensive monitoring of heart rate and blood pressure did not demonstrate any clinically meaningful changes with setmelanotide treatment compared with placebo. Similarly, in the MAD clinical trial, there was no evidence of any notable changes in cardiovascular parameters compared to placebo when assessed by 24-hour ambulatory blood pressure monitoring, or ABPM. We determined that the terminal half-life of setmelanotide is approximately nine to ten hours, making it suitable for once daily dosing.

Four cohorts of the Phase 1 MAD clinical trial that included doses of greater than 0.01 mg/kg/day, which is approximately 1 mg/day, for two to four weeks, demonstrated placebo subtracted weight loss differences. Most panels showed statistically significant, placebo subtracted weight reduction that ranged from 0.6 to 1.4 kg/week, with a mean of approximately 0.9 kg/week over the two to four weeks of treatment in Phase 1.

**Setmelanotide: Phase 1b General Obesity Patients: Placebo Subtracted Differences[(1)(2)]**




(1) Over two to four weeks of treatment with setmelanotide by continuous SC infusion. Placebo subtracted differences are the FDA's primary weight loss analysis approach, assessing the weight difference between active and placebo treatment groups for changes from baseline for weight.

(2) Preliminary data.

D = Placebo subtracted weight loss from baseline

BID = Two times per day

*Phase 1 Energy Expenditure Clinical Trial*

In collaboration with the National Institute of Diabetes, Digestive and Kidney Diseases, we investigated setmelanotide in a Phase 1 clinical trial to determine the effects of setmelanotide on energy expenditure, a mechanism for weight loss, in addition to the well-known effects of MC4R agonists on appetite and food intake. Twelve obese adults were randomized to receive setmelanotide or placebo by continuous SC infusion over 72 hours, followed immediately by crossover to the other treatment. Setmelanotide showed statistically significant 6.85% increases in resting energy expenditure, supporting a role for setmelanotide in weight regulation. This trial provided the first clinical demonstration that MC4R activation with setmelanotide increases resting energy expenditure in obese humans.

*Safety and Tolerability*

Historically, clinical data with other MC4R therapies suggested that MC4R-mediated effects may include changes in blood pressure and heart rate, increased erections in males, changes in libido and sexual function in females and nausea and vomiting. As a result, primarily due to concerns about blood pressure and heart rate changes, none of these therapies have proceeded to commercialization and no other MC4R agonists are currently in the clinic for the treatment of obesity and/or hyperphagia. It is noteworthy that the pattern of effects appeared different among each of the other MC4R therapies, underscoring the

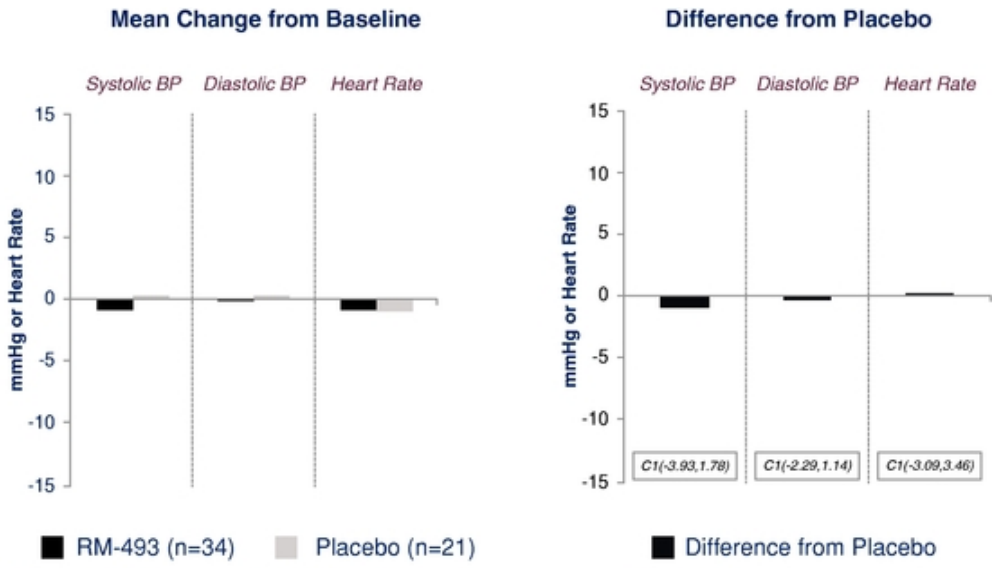
complex physiology of MC4R. With setmelanotide, there has been little, if any, evidence of blood pressure or heart rate changes, preliminarily supporting an important differentiation of setmelanotide from previous MC4R therapies. Careful monitoring for blood pressure and heart rate changes, as well as other potential adverse events, is included in all setmelanotide clinical trials.

Because of these first generation MC4 therapy failures, the setmelanotide program employed an intensive preclinical screening program to assess clinical candidates for blood pressure and heart rate effects, along with efficacy. The cornerstone of this preclinical screening program was a significant investment in obese primate studies which validated setmelanotide as a promising compound for clinical development.

Setmelanotide was generally well-tolerated in our Phase 1 and Phase 2 clinical trials. Overall, except as outlined below, the number and patterns of adverse events was generally low, and the intensity of the adverse events was generally mild, and infrequently led to clinical trial discontinuation. There has been only a single serious adverse event possibly attributed to setmelanotide in our clinical trials. In our Phase 2 clinical trial with once daily SC injection one patient was hospitalized for unusual chest pain, but no evidence of any serious respiratory or cardiac cause was found after careful evaluation, and the event was attributed to musculoskeletal pain. There were no treatment-related changes in physical examination, except as noted below, and few, if any, clinically relevant changes in electrocardiograms, laboratory data and/or anti-drug antibodies.

To demonstrate that setmelanotide has the potential to provide a safe cardiovascular profile, we extensively validated setmelanotide in obese primate preclinical studies, with special attention to cardiovascular effects. The results of these studies supported testing in clinical trials. In the clinical trials, we monitored blood pressure and heart rate extensively, primarily by 24-hour ABPM. In most clinical trials, there were multiple 24-hour ABPM periods, both on a pre-treatment and post-treatment basis. Trial-by-trial review of the 24-hour ABPM data shows little, if any, evidence of changes in heart rate and/or blood pressure even at the highest doses tested in Phase 1 and Phase 2 clinical trials. We have also conducted an analysis of 24-hour ABPMs that were obtained pre-dose and post-dose across completed studies. This included 128 patients, of which 79 were active and 49 were on a placebo. Overall, there was little, if any, evidence of blood pressure or heart rate changes evident from baseline versus placebo in any trial, preliminarily supporting an important differentiation of setmelanotide from previous MC4 therapies. While the preliminary data are encouraging, there will be continued focus on potential cardiovascular risk until addressed in larger and longer clinical trials.

**Setmelanotide Phase 2 SC Injection Trial: 24-hr ABPM (All Studied Patients), Showing No Adverse Effect of Setmelanotide on Blood Pressure or Heart Rate**




*24-hr Ambulatory Blood Pressure Monitoring (ABPM) performed predose and between Days 8 and 9 of dosing; Measurements obtained every 15-20 min throughout the 24-hrs*

In the majority of our trials, there was a small increase in penile erections in male patients, as well as signs of sexual arousal in a small number of female patients. These symptoms were infrequent, generally mild, not painful, and were short-lived. Most often these symptoms were reported in the first week of treatment. There was a small incidence of nausea and vomiting, as well as of injection site reactions, both of which usually were reported as mild, early in treatment, and short-lived. A small number of patients had dose reductions and/or discontinued treatment due to nausea and vomiting.

We also noted darkening of skin and skin lesions, such as moles and freckles, in most patients who received setmelanotide. This was likely caused by activation of the closely related MC1 receptor, the receptor that mediates skin darkening in response to sun exposure. This was observed generally after one to two weeks of treatment, most often plateaued by two to four weeks of treatment, and like sun-related tanning, generally returned to baseline after cessation of exposure.

Other effects, specifically back pain, headaches fatigue, diarrhea and arthralgia, have been numerically more frequent in setmelanotide-treated patients as compared to placebo patients, but most investigators reported these effects to be unrelated to setmelanotide.

While general obese patients are not currently the focus of setmelanotide studies, the FDA considers the risk and benefit information observed to date with setmelanotide in general obese patients to be supportive of the continued development of this therapy. These data from general obese patients do not raise any new safety concerns and suggest that substantial benefit, as evidenced by weight loss, is possible.

*Preclinical Development*

Preclinical studies demonstrated the efficacy of setmelanotide in suppressing food intake and body weight gain in diet-induced obese mice, rats, dogs, and rhesus macaques, as well as in genetic models of obesity, including leptin-deficient ob/ob mice and obese Zucker, or fa/fa (leptin-receptor deficient), rats. Furthermore, setmelanotide is associated with restoring insulin sensitivity in nonclinical models of obesity in rodents and lowering of plasma triglycerides, cholesterol, and free fatty acids.

In particular, we demonstrated activity in obese non-human primates, where approximately 13% weight loss was demonstrated with eight weeks of treatment, without evidence of cardiovascular toxicity. We also studied obese primates in crossover studies to confirm the lack of cardiovascular toxicity by setmelanotide in obese primates. These preclinical studies also confirmed the cardiovascular effects of previous MC4 therapies that had produced cardiovascular toxicity in humans. In contrast, setmelanotide was without cardiovascular effects in head-to-head studies.

We completed one and three month toxicology studies, with doses and exposures that are more than 300-fold greater than those at the anticipated clinical doses without evidence of clinically relevant toxicological findings. We are currently initiating chronic toxicity studies and a juvenile toxicology study that are designed to rapidly support dosing in pediatric patients less than 12 years of age. In addition, we are planning carcinogenicity studies, the longest of which is expected to be two years in length, but the FDA may allow NDA filing without one or both of the carcinogenicity studies for these rare disease populations.

In addition to developing the once daily SC injectable formulation of setmelanotide that we will use in all planned future clinical trials, in collaboration with Camurus AB, or Camurus, we have developed compelling preclinical data with a once weekly slow release formulation, and we are rapidly moving this latter formulation forward. We will likely proceed to pharmacokinetic trials of this formulation in the next one to two years.

**Competition**

The biotechnology and pharmaceutical industries are intensely competitive and subject to rapid and significant technological change. We have competitors in a number of jurisdictions, many of which have substantially greater name recognition, commercial infrastructures and financial, technical and personnel resources than we have. Established competitors may invest heavily to quickly discover and develop compounds that could make setmelanotide obsolete or uneconomical. Any new product that competes with an approved product may need to demonstrate compelling advantages in efficacy, convenience, tolerability and safety to be commercially successful. Other competitive factors, including generic competition, could force us to lower prices or could result in reduced sales. In addition, new products developed by others could emerge as competitors to setmelanotide. If we are not able to compete effectively against our current and future competitors, our business will not grow and our financial condition and operations will suffer.

There are no current pharmacological treatments for regulating hunger and hyperphagia-related behaviors of patients with PWS, POMC deficiency obesity, POMC heterozygous deficiency obesity or LepR deficiency obesity. Bariatric surgery is contraindicated in patients with PWS, and the severe obesity and hyperphagia associated with these other genetic disorders of obesity are also considered to be risk factors for bariatric surgery. We are also aware that Zafgen, Inc. is conducting a clinical trial in PWS with beloranib, a MetAP2 inhibitor thought to affect the metabolism of fat. However, on December 2, 2015, Zafgen announced that the beloranib IND application had been placed on complete clinical hold. We are aware of a clinical trial that was recently completed by Ferring Pharmaceuticals, Inc. to evaluate the use of carbetocin, an analogue of a brain peptide hormone oxytocin, hypothesized to increase trust, reduce anxiety and improve behavior in patients with PWS. We also are aware of a clinical trial being conducted by Essentialis, Inc. to evaluate the safety and tolerability of controlled-release diazoxide in patients with PWS and to explore the effects of diazoxide on hyperphagia-related behaviors and energy expenditure. In August 2015, Novo Nordisk announced it will initiate a Phase 3 trial of Saxenda (liraglutide injection) for weight management in pediatric PWS patients. Also, Alize Pharma recently started a Phase 2 clinical trial in PWS of AZP-531, its unacylated ghrelin analog.

**Licensing Agreements**

*Ipsen Pharma S.A.S.*

In February 2010, the Predecessor Company entered into a license agreement with Ipsen S.A.S., or Ipsen, pursuant to which Ipsen granted to it an exclusive, sublicensable, worldwide license to certain patents and other intellectual property rights to research, develop, and commercialize compounds that were discovered or researched by Ipsen in the course of conducting its MC4 program or that otherwise were covered by the licensed patents. Rights under the license included the right to research, develop and commercialize setmelanotide. Pursuant to the license, Ipsen also granted to the Predecessor Company a non-exclusive, sublicensable, worldwide license to certain patents and other intellectual property rights that were licensed by Ipsen from a third party or that Ipsen may develop in the future to research, develop, and commercialize any of the compounds exclusively licensed by Ipsen pursuant to the license.

On March 21, 2013, the LLC entity completed the Corporate Reorganization pursuant to which, among other things, the existing license with Ipsen with respect to the MC4 program is now held separately by us. As a result we hold the rights to the MC4 program, including the rights to develop and commercialize setmelanotide.

Under the terms of the Ipsen license agreement, Ipsen will receive payments of up to $40.0 million upon the achievement of certain development and commercial milestones in connection with the development, regulatory approval and commercialization of applicable licensed products, and royalties on future sales of the licensed products. Substantially all of the aggregate payments under the Ipsen license agreement are for milestones that may be achieved no earlier than first commercial sale of the applicable licensed product. Royalties in the mid-single digits on future sales of the applicable licensed products will be due under the Ipsen license agreement on a licensed product-by-licensed product and country-by-country basis until the later of the date when sales of a licensed product in a particular country are no longer covered by patent rights licensed pursuant to the Ipsen license agreement and the tenth anniversary of the date of the first commercial sale of the applicable licensed product in the applicable country. The term of the Ipsen license agreement continues until the expiration of the applicable royalty term on a country-by-country and product-by- product basis. Upon expiration of the term of the agreement, the licensed rights granted to us under the agreement, to the extent they remain in effect at the time of expiration, will thereafter become irrevocable, perpetual and fully paid-up licenses that survive the expiration of the term. We have a right to terminate the license agreement at any time during the term for any reason on 180 days' written notice to Ipsen. Ipsen has a right to terminate the agreement prior to expiration of its term for our material breach of the agreement, our failure to initiate or complete development of a licensed product or our bringing an action seeking to have an Ipsen license patent right declared invalid. Upon any early termination of the license agreement not due to Ipsen's material breach, all licensed rights granted under the license agreement will terminate.

*Camurus*

In January 2016, we entered into a license agreement for the use of Camurus' drug delivery technology, FluidCrystal, to formulate setmelanotide with Camurus. Under the terms of the agreement, Camurus granted us a worldwide license to the FluidCrystal technology to formulate setmelanotide and to develop, manufacture, and commercialize this new formulation that has the potential for once-weekly dosing, administered as a subcutaneous injection. The license granted to us is specific to the FluidCrystal technology incorporating setmelanotide. Under the terms of the license agreement, we are responsible for manufacturing, development, and commercialization of the setmelanotide FluidCrystal formulation worldwide. Camurus is eligible to receive an upfront payment and progressive payments of approximately $65.0 million, of which the majority are sales milestones. In addition, Camurus is eligible to receive tiered, mid to mid-high, single digit royalties on future sales of the product.

**Commercial Operations**

We intend to establish our own commercial sales and marketing organization in the United States and core strategic markets. We intend to establish a specialty sales force that will target physicians treating PWS and other rare genetic disorders of obesity, including pediatric and adult endocrinologists, as well as pharmacists. The sales force will be supported by sales management, internal sales support, an internal marketing group and distribution support. Additionally, the sales and marketing teams will manage relationships with key accounts including managed care organizations, group-purchasing organizations, hospital systems, and government accounts. We will also selectively establish partnerships in markets outside the United States for sales, marketing and distribution.

**Patents and Proprietary Rights**

We have in-licensed a large patent portfolio from Ipsen for our melanocortin programs. The portfolio includes multiple patent families, and all of these in-licensed patent families are being prosecuted or maintained by Ipsen in consultation with us. We have also filed patent applications in three families which are exclusively owned and maintained by us that relate to the melanocortin program.

Our MC4 portfolio, which includes setmelanotide, consists of nine patent families currently being prosecuted or maintained, which include applications and patents directed to compositions of matter, formulations and methods of treatment using setmelanotide. As of September 28, 2015, the portfolio licensed for the MC-4 program consists of two issued United States patents and 29 issued non-United States patents across four of the nine families. We are actively pursuing 10 United States patent applications and 67 non-United States applications in 14 jurisdictions.

In the patent family directed to the composition of matter for setmelanotide, we have one issued United States patent and 16 issued non-United States patents, including Australia, Canada, China, Europe, Hong Kong, Israel, Japan, Korea, New Zealand, Russia and Singapore. The standard 20-year term for patents in this family would expire in 2026, but the United States patent will expire in 2027 due to a patent term adjustment. Patent term extensions for delays in marketing approval may also extend the terms of patents in this family.

***Intellectual Property Protection Strategy***

We currently seek, and intend to continue seeking, patent protection whenever commercially reasonable for any patentable aspects of our existing product candidate and related technology or any new products or product candidates we acquire in the future. Where our intellectual property is not protected by patents, we may seek to protect it through other means, including maintenance of trade secrets and careful protection of our proprietary information. Our license from Ipsen for the melanocortin program require Ipsen, subject to certain exceptions and upon consultation with us, to prosecute and maintain its patent rights as they relate to the licensed compounds and methods. If Ipsen decides to cease prosecution or maintenance of any of the licensed patent rights, we have the option to take over prosecution and maintenance of those patents and Ipsen will assign to us all of its rights in such patents. For those patent rights that we own exclusively, we control all prosecution and maintenance activities.

The patent positions of biopharmaceutical companies are generally uncertain and involve complex legal, scientific and factual questions. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance. Consequently, we do not know whether the product candidate we in-license will be protectable or remain protected by enforceable patents. We cannot predict whether the patent applications we are currently pursuing will issue as patents in any particular jurisdiction, and furthermore, we cannot determine whether the claims of any issued patents will provide sufficient proprietary protection to protect us from competitors, or will be challenged, circumvented or invalidated by third parties. Because patent applications in the United States and certain other jurisdictions are maintained in secrecy for 18 months,

and since publication of discoveries in the scientific or patent literature often lags behind actual discoveries, we cannot be certain of the priority of inventions covered by pending patent applications. This potential issue is exacerbated by the fact that, prior to March 16, 2013, in the United States, the first to make the claimed invention may be entitled to the patent. On March 16, 2013, the United States transitioned to a "first to file" system in which the first inventor to file a patent application may be entitled to the patent. Therefore, we may have to participate in interference proceedings declared by the United States Patent and Trademark Office, or PTO, or a foreign patent office to determine priority of invention. Moreover, we may have to participate in other proceedings declared by the United States PTO or a foreign patent office, such as post-grant proceedings and oppositions, that challenge the validity of a granted patent. Such proceedings could result in substantial cost, even if the eventual outcome is favorable to us.

Although we currently have issued patents directed to a number of different attributes of our products, and pending applications on others, there can be no assurance that any issued patents would be held valid by a court of competent jurisdiction. An adverse outcome could subject us to significant liabilities to third parties, require disputed rights to be licensed from third parties or require us to cease using specific compounds or technology. To the extent prudent, we intend to bring litigation against third parties that we believe are infringing our patents.

The term of individual patents depends upon the legal term of the patents in the countries in which they are 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, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the United States PTO in granting a patent, or may be shortened if a patent is terminally disclaimed over another patent with an earlier expiration date.

As mentioned above, in the United States, the patent term of a patent that covers an FDA-approved drug may also be eligible for patent term extension, which permits patent term restoration as compensation for the patent term lost during the FDA regulatory review process. In the future, if and when our pharmaceutical products receive FDA approval, we expect to apply for patent term extensions on patents covering those products. We intend to seek patent term adjustments and 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 FDA in the United States, will agree with our assessment of whether such extensions should be granted, and even if granted, the length of such adjustments or extensions.

To protect our rights to any of our issued patents and proprietary information, we may need to litigate against infringing third parties, or avail ourselves of the courts or participate in hearings to determine the scope and validity of those patents or other proprietary rights. These types of proceedings are often costly and could be very time-consuming to us, and we cannot be certain that the deciding authorities will rule in our favor. An unfavorable decision could result in the invalidation or a limitation in the scope of our patents or forfeiture of the rights associated with our patents or pending patent applications. Any such decision could result in our key technologies not being protectable, allowing third parties to use our technology without being required to pay us licensing fees or may compel us to license needed technologies from third parties to avoid infringing third-party patent and proprietary rights. Such a decision could even result in the invalidation or a limitation in the scope of our patents or could cause us to lose our rights under existing issued patents or not to have rights granted under our pending patent applications.

In addition, we intend to seek orphan drug exclusivity in jurisdictions in which it is available. A prerequisite to orphan drug exclusivity in the United States and in the European Union is orphan drug designation. An orphan drug designation may be granted where a drug is developed specifically to treat a rare or uncommon medical treatment. If a product which has an orphan drug designation subsequently receives the first regulatory approval for the indication for which it has such designation, the product is entitled to orphan exclusivity, meaning that the applicable regulatory authority may not approve any other applications to market the same drug for the same indication, except in certain very limited circumstances,

for a period of seven years in the United States and 10 years in the European Union. Orphan drug exclusivity does not prevent competitors from developing or marketing different drugs for an indication.

We also rely on trade secret protection for our confidential and proprietary information. Although we take steps to protect our proprietary information and trade secrets, including through contractual means with our employees and consultants, no assurance can be given that others will not independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets or disclose such technology, or that we can 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 developed or made known to the individual during the course of the individual'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 will be our exclusive property. There can be no assurance, however, that these agreements will provide meaningful protection or adequate remedies for our trade secrets in the event of unauthorized use or disclosure of such information.

**Manufacturing**

We currently contract with a third party for the manufacture of setmelanotide and intend to continue to do so in the future. We have entered into a process development and manufacturing services agreement with Peptisyntha SA, or Peptisyntha, under which Peptisyntha will provide certain process development and manufacturing services in connection with the manufacture of setmelanotide. Under the agreement, we pay Peptisyntha for services in accordance with the terms of mutually agreed upon work orders, which we and Peptisyntha may enter into from time to time. The agreement also provides that, subject to certain conditions, for a period following each product launch date, we will source from Peptisyntha a portion of our requirements for that product being sourced from non-affiliate third parties. Under the agreement, each party is subject to customary indemnification provisions.

The Peptisyntha agreement will continue, unless earlier terminated pursuant to its terms, until the later of six years from the July 17, 2013 effective date or the completion of all services under all work plans executed in accordance with the terms of the agreement prior to the sixth anniversary of its effective date. The agreement may be extended by us continuously for additional two-year periods upon written notice to Peptisyntha. We also may terminate the agreement or any work order thereunder upon at least 30 days' prior written notice to Peptisyntha.

We currently have no plans to build our own clinical or commercial scale manufacturing capabilities. To meet our projected needs for clinical supplies to support our activities through regulatory approval and commercial manufacturing, the contract manufacturing organizations, or CMOs, with whom we currently work will need to increase scale of production or we expect that we will need to secure alternate suppliers. We have not currently identified alternate suppliers in the event the current CMOs we utilize are unable to scale production. Because we rely on these CMOs, we have personnel with pharmaceutical development and manufacturing experience who are responsible for maintaining our CMO relationships.

**Regulatory Matters**

***Government Regulation and Product Approvals***

Government authorities in the United States, at the federal, state and local level, and in other countries and jurisdictions, including the European Union, 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 marketing 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.

***Review and Approval of Drugs in the United States***

In the United States, the FDA approves drug products under the Federal Food, Drug, and Cosmetic Act, or FDCA, and associated implementing regulations. Biological products, on the other hand, are licensed by FDA under the Public Health Service Act, or PHSA. With passage of the Biologics Price Competition and Innovation Act of 2009, Congress amended the definition of "biological product" in the PHSA so as to exclude a chemically synthesized polypeptide from licensure under the PHSA. Rather, the Act provided that such products would be treated as drugs under the FDCA. Subsequently, through final guidance issued in April 2015, FDA indicated that a "chemically synthesized polypeptide" is any alpha amino acid polymer that is made entirely by chemical synthesis and is less than 100 amino acids in size. Accordingly, based on this FDA guidance, we believe that our products will not be treated as biologics subject to approval of a biologics license application, or BLA, by the FDA, and rather will be treated as drug products subject to approval of a new drug application, or NDA, by the FDA pursuant to the FDCA.

The failure to comply with applicable requirements under the FDCA and other applicable laws at any time during the product development process, approval process or after approval may subject an applicant and/or sponsor to a variety of administrative or judicial sanctions, including refusal by the FDA to approve pending applications, withdrawal of an approval, imposition of a clinical hold, issuance of warning letters and other types of letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement of profits, or civil or criminal investigations and penalties brought by the FDA and the Department of Justice or other governmental entities.

An applicant seeking approval to market and distribute a new drug product in the United States must typically undertake the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA's good laboratory practice, or GLP, regulations;
- submission to the FDA of an IND, which must take effect before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, representing each clinical site before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with current Good Clinical Practices, or cGCPs, to establish the safety and efficacy of the proposed drug product for each proposed indication;
- preparation and submission to the FDA of an NDA requesting marketing for one or more proposed indications;
- review by an FDA advisory committee, where appropriate or if applicable;
- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities at which the product, or components thereof, are produced to assess compliance with current Good Manufacturing Practices, or cGMP, requirements and to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity;
- satisfactory completion of FDA audits of clinical trial sites to assure compliance with cGCPs and the integrity of the clinical data;
- payment of user fees and securing FDA approval of the NDA; and

- compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS, and the potential requirement to conduct post-approval studies.

***Preclinical Studies***

Before an applicant begins testing a compound with potential therapeutic value in humans, the drug candidate enters the preclinical testing stage. Preclinical studies include laboratory evaluation of product chemistry, toxicity and formulation, as well as *in vitro* and animal studies to assess the potential safety and activity of the drug for initial testing in humans and to establish a rationale for therapeutic use. The conduct of preclinical studies is subject to federal regulations and requirements, including GLP regulations. The results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and plans for clinical trials, among other things, are submitted to the FDA as part of an IND. Some long-term preclinical testing, such as animal tests of reproductive adverse events and carcinogenicity, may continue after the IND is submitted.

***Human Clinical Trials in Support of an NDA***

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators in accordance with cGCP requirements, which include, among other things, the requirement that all research subjects provide their informed consent in writing before their participation in any clinical trial. Clinical trials are conducted under written study protocols detailing, among other things, the inclusion and exclusion criteria, the objectives of the study, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. An IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to a proposed clinical trial and places the trial on clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. The FDA can place an IND on clinical hold at any point in development, and depending upon the scope of the hold, clinical trials may not restart until resolution of the outstanding concerns to the FDA's satisfaction.

In addition, an IRB representing each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution, and the IRB must conduct a continuing review and reapprove the study at least annually. The IRB must review and approve, among other things, the study protocol and informed consent information to be provided to study subjects. An IRB must operate in compliance with FDA regulations. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health for public dissemination on their ClinicalTrials.gov website.

Human clinical trials are typically conducted in three sequential phases, which may overlap or be combined:

- ***Phase 1.*** The drug is initially introduced into healthy human subjects or, in certain indications such as cancer, patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early indication of its effectiveness and to determine optimal dosage.

- ***Phase 2.*** The drug is administered to a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.

- ***Phase 3.*** The drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically

evaluate the efficacy and safety of the product for approval, to establish the overall risk-benefit profile of the product and to provide adequate information for the labeling of the product.

Post-approval studies, or Phase 4 clinical trials, may be conducted after initial marketing approval. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. In addition, IND safety reports must be submitted to the FDA for any of the following: serious and unexpected suspected adverse reactions; findings from other studies or animal or *in vitro* testing that suggest a significant risk in humans exposed to the drug; and any clinically important increase in the case of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The FDA or the sponsor or its data monitoring committee may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution, or an institution it represents, if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients. The FDA will typically inspect one or more clinical sites to assure compliance with cGCPs and the integrity of the clinical data submitted.

During the course of clinical development the sponsor often refines the indication and endpoints on which the NDA will be based. For endpoints based on PROs and OROs, the process typically is an iterative one. The FDA has issued guidance on the framework it uses to evaluate PRO instruments, and it may offer advice on optimizing PRO and ORO instruments during the clinical development process, but the FDA usually reserves final judgment until it reviews the NDA.

Concurrent with clinical trials, companies often complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the drug as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the drug candidate and, among other things, must develop methods for testing the identity, strength, quality, purity and potency of the final drug. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the drug candidate does not undergo unacceptable deterioration over its shelf life.

In a general guidance meeting with FDA review staff in 2013, following the opening of our independent new drug application for the development of setmelanotide, the FDA provided us with general principles to follow in designing clinical studies for drugs intended for use in an indication targeted to a specific obese population. In 2015, we received further guidance from FDA review staff in a meeting to discuss clinical endpoints and trial design strategies for the study of setmelanotide in patients with rare genetic forms of obesity. At that meeting, the FDA noted its experience in applying regulatory flexibility for drugs intended to treat rare diseases. It indicated that it would take into account factors related to particular patient populations, such as the prevalence and severity of the disease, but also noted that the requirements for a phase 3 program would depend on the effect observed and the robustness of the results. The FDA also indicated that it would exercise flexibility regarding the timing and requirements for certain preclinical toxicology testing. In 2016, we intend to take advantage of our breakthrough therapy designation by meeting regularly with FDA review staff to discuss methods to shorten the development timeline for an indication in POMC deficiency obesity, and to use the knowledge gained to do likewise for other closely-related indications in rare genetic forms of obesity.

***Submission and Review of an NDA by the FDA***

Assuming successful completion of required clinical testing and other requirements, the results of the preclinical studies and clinical trials, together with detailed information relating to the product's chemistry,

manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of an NDA requesting approval to market the drug product for one or more indications. Under federal law, the submission of most NDAs is additionally subject to an application user fee, and the sponsor of an approved NDA is also subject to annual product and establishment user fees. Certain exceptions and waivers are available for some of these fees, such as an exception from the application fee for drugs with orphan designation and a waiver for certain small businesses, an exception from the establishment fee when the establishment does not engage in manufacturing the drug during a particular fiscal year and an exception from the product fee for a drug that is the same as another drug approved under an abbreviated pathway. Each category of fees is typically increased annually.

The FDA conducts a preliminary review of an NDA generally within 60 calendar days of its receipt and strives to inform the sponsor by the 74th day after the FDA's receipt of the submission to determine whether the application is sufficiently complete to permit substantive review. The FDA may request additional information rather than accept an NDA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA has agreed to specified performance goals in the review process of NDAs. Under that agreement, 90% of applications seeking approval of New Molecular Entities, or NMEs, are meant to be reviewed within ten months from the date on which the FDA accepts the NDA for filing, and 90% of applications for NMEs that have been designated for "priority review" are meant to be reviewed within six months of the filing date. For applications seeking approval of drugs that are not NMEs, the ten-month and six-month review periods run from the date the FDA receives the application. The review process and the Prescription Drug User Fee Act goal date may be extended by the FDA for three additional months to consider new information or clarification provided by the applicant to address an outstanding deficiency identified by the FDA following the original submission.

Before approving an NDA, the FDA typically will inspect the facility or facilities where the product is or will be manufactured. These pre-approval inspections may cover all facilities associated with an NDA submission, including drug component manufacturing, e.g., active pharmaceutical ingredients, finished drug product manufacturing, and control testing laboratories. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA, the FDA will typically inspect one or more clinical sites to assure compliance with cGCP.

In addition, as a condition of approval, the FDA may require an applicant to develop a REMS. REMS use risk minimization strategies beyond the professional labeling to ensure that the benefits of the product outweigh the potential risks. To determine whether a REMS is needed, the FDA will consider the size of the population likely to use the product, seriousness of the disease, expected benefit of the product, expected duration of treatment, seriousness of known or potential adverse events, and whether the product is a new molecular entity. REMS can include medication guides, physician communication plans for healthcare professionals, and elements to assure safe use, or ETASU. ETASU may 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 FDA may require a REMS before approval or post-approval if it becomes aware of a serious risk associated with use of the product. The requirement for a REMS can materially affect the potential market and profitability of a product.

The FDA is required to refer an application for a novel drug to an advisory committee or explain why such referral was not made. Typically, an advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

***Fast Track, Breakthrough Therapy and Priority Review Designations***

The FDA is authorized to designate certain products for expedited review if they are intended to address an unmet medical need in the treatment of a serious or life-threatening disease or condition. These programs are fast track designation, breakthrough therapy designation and priority review designation.

Specifically, the FDA may designate a product for fast track review if it is intended, whether alone or in combination with one or more other drugs, for the treatment of a serious or life-threatening disease or condition where non-clinical or clinical data demonstrates the potential to address unmet medical needs for such a disease or condition. For fast track products, sponsors may have greater interactions with the FDA and the FDA may initiate review of sections of a fast track product's NDA before the application is complete. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by the sponsor, that a fast track product may be effective. The sponsor must also provide, and the FDA must approve, a schedule for the submission of the remaining information and the sponsor must pay applicable user fees. However, the FDA's time period goal for reviewing a fast track application does not begin until the last section of the complete NDA is submitted. In addition, the fast track designation may be withdrawn by the FDA if the FDA believes that the designation is no longer supported by data emerging in the clinical trial process.

Second, in 2012, Congress enacted the Food and Drug Administration Safety and Innovation Act, or FDASIA. This law established a new "breakthrough therapy" designation. A product may be designated as a breakthrough therapy if it is intended, either alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The designation includes all of the features of Fast Track designation, as well as more intensive FDA interaction and guidance. The FDA may take certain actions with respect to breakthrough therapies, including holding meetings with the sponsor throughout the development process; providing timely advice to the product sponsor regarding development and approval; involving more senior staff in the review process; assigning a cross-disciplinary project lead for the review team; and taking other steps to design efficient clinical trials.

Third, the FDA may designate a product for priority review if it is a drug that treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness. The FDA determines, on a case-by-case basis, whether the proposed drug represents a significant improvement in safety and effectiveness when compared with other available therapies. Significant improvement may be illustrated by evidence of increased effectiveness in the treatment of a condition, elimination or substantial reduction of a treatment-limiting drug reaction, documented enhancement of patient compliance that may lead to improvement in serious outcomes, and evidence of safety and effectiveness in a new subpopulation. A priority designation is intended to direct overall attention and resources to the evaluation of such applications, and to shorten the FDA's goal for taking action on a marketing application from ten months to six months.

***Accelerated Approval Pathway***

The FDA may grant accelerated approval to a drug for a serious or life-threatening condition that provides meaningful therapeutic advantage to patients over existing treatments based upon a determination that the drug has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. The FDA may also grant accelerated approval for such a condition when the product has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality, or IMM, and 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. Drugs granted accelerated approval must meet the same statutory standards for safety and effectiveness as those granted traditional approval.

For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign or other measure that is thought to predict clinical benefit, but is not itself a measure of clinical benefit. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. An intermediate clinical endpoint is a measurement of a therapeutic effect that is considered reasonably likely to predict the clinical benefit of a drug, such as an effect on IMM. The FDA has limited experience with accelerated approvals based on intermediate clinical endpoints, but has indicated that such endpoints generally may support accelerated approval where the therapeutic effect measured by the endpoint is not itself a clinical benefit and basis for traditional approval, if there is a basis for concluding that the therapeutic effect is reasonably likely to predict the ultimate clinical benefit of a drug.

The accelerated approval pathway is most often used in settings in which the course of a disease is long and an extended period of time is required to measure the intended clinical benefit of a drug, even if the effect on the surrogate or intermediate clinical endpoint occurs rapidly. Thus, accelerated approval has been used extensively in the development and approval of drugs for treatment of a variety of cancers in which the goal of therapy is generally to improve survival or decrease morbidity and the duration of the typical disease course requires lengthy and sometimes large trials to demonstrate a clinical or survival benefit. Thus, the benefit of accelerated approval derives from the potential to receive approval based on surrogate endpoints sooner than possible for trials with clinical or survival endpoints, rather than deriving from any explicit shortening of the FDA approval timeline, as is the case with priority review.

The accelerated approval pathway is usually contingent on a sponsor's agreement to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe the drug's clinical benefit. As a result, 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, would allow the FDA to initiate expedited proceedings to withdraw approval of the drug. All promotional materials for drug candidates approved under accelerated regulations are subject to prior review by the FDA.

***The FDA's Decision on an NDA***

On the basis of the FDA's evaluation of the NDA and accompanying information, including the results of the inspection of the manufacturing facilities, the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. A complete response letter generally outlines the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. If and when those deficiencies have been addressed to the FDA's satisfaction in a resubmission of the NDA, the FDA will issue an approval letter. The FDA has committed to reviewing such resubmissions in two or six months depending on the type of information included. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

If the FDA approves a product, it may limit the approved indications for use for the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess the drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-market studies or

surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

***Post-Approval Requirements***

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims, are subject to prior FDA review and approval. There also are continuing, annual user fee requirements for any marketed products and the establishments at which such products are manufactured, as well as new application fees for supplemental applications with clinical data.

In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies, and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, suspension of the approval, or complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending NDAs or supplements to approved NDAs;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act, or PDMA, and its implementation regulations, as well as the Drug Supply Chain Security Act, or DSCSA, which regulate the distribution and tracing of prescription drugs and prescription drug samples at the federal level, and set minimum standards for the regulation of drug distributors by the states. The PDMA, its implementing regulations and state laws limit the distribution of prescription pharmaceutical product samples, and the DSCSA imposes requirements to ensure accountability in distribution and to identify and remove counterfeit and other illegitimate products from the market.

***Abbreviated New Drug Applications for Generic Drugs***

In 1984, with passage of the Hatch-Waxman Amendments to the FDCA, Congress established an abbreviated regulatory scheme allowing the FDA to approve generic drugs that are shown to contain the same active ingredients as, and to be bioequivalent to, drugs previously approved by the FDA pursuant to NDAs. To obtain approval of a generic drug, an applicant must submit an abbreviated new drug application, or ANDA, to the agency. An ANDA is a comprehensive submission that contains, among other things, data and information pertaining to the active pharmaceutical ingredient, bioequivalence, drug product formulation, specifications and stability of the generic drug, as well as analytical methods, manufacturing process validation data and quality control procedures. ANDAs are "abbreviated" because they generally do not include preclinical and clinical data to demonstrate safety and effectiveness. Instead, in support of such applications, a generic manufacturer may rely on the preclinical and clinical testing previously conducted for a drug product previously approved under an NDA, known as the reference-listed drug, or RLD.

Specifically, in order for an ANDA to be approved, the FDA must find that the generic version is identical to the RLD with respect to the active ingredients, the route of administration, the dosage form, the strength and the conditions of use of the drug. At the same time, the FDA must also determine that the generic drug is "bioequivalent" to the innovator drug. Under the statute, a generic drug is bioequivalent to a RLD if "the rate and extent of absorption of the drug do not show a significant difference from the rate and extent of absorption of the listed drug..."

Upon approval of an ANDA, the FDA indicates whether the generic product is "therapeutically equivalent" to the RLD in its publication "Approved Drug Products with Therapeutic Equivalence Evaluations," also referred to as the "Orange Book." Physicians and pharmacists consider a therapeutic equivalent generic drug to be fully substitutable for the RLD. In addition, by operation of certain state laws and numerous health insurance programs, the FDA's designation of therapeutic equivalence often results in substitution of the generic drug without the knowledge or consent of either the prescribing physician or patient.

Under the Hatch-Waxman Amendments, the FDA may not approve an ANDA until any applicable period of non-patent exclusivity for the RLD has expired. The FDCA provides a period of five years of non-patent data exclusivity for a new drug containing a new chemical entity. For the purposes of this provision, a new chemical entity, or NCE, is a drug that contains no active moiety that has previously been approved by the FDA in any other NDA. An active moiety is the molecule or ion responsible for the physiological or pharmacological action of the drug substance. In cases where such NCE exclusivity has been granted, an ANDA may not be filed with the FDA until the expiration of five years unless the submission is accompanied by a Paragraph IV certification, in which case the applicant may submit its application four years following the original product approval.

The FDCA also provides for a period of three years of exclusivity if the NDA includes reports of one or more new clinical investigations, other than bioavailability or bioequivalence studies, that were conducted by or for the applicant and are essential to the approval of the application. This three-year exclusivity period often protects changes to a previously approved drug product, such as a new dosage form, route of administration, combination or indication. Three-year exclusivity would be available for a drug product that contains a previously approved active moiety, provided the statutory requirement for a new clinical investigation is satisfied. Unlike five-year NCE exclusivity, an award of three-year exclusivity does not block the FDA from accepting ANDAs seeking approval for generic versions of the drug as of the date of approval of the original drug product. The FDA typically makes decisions about awards of data exclusivity shortly before a product is approved.

***505(b)(2) NDAs***

As an alternative path to FDA approval for modifications to formulations or uses of products previously approved by the FDA pursuant to an NDA, an applicant may submit an NDA under Section 505(b)(2) of the FDCA. Section 505(b)(2) was enacted as part of the Hatch-Waxman Amendments and permits the filing of an NDA where at least some of the information required for approval comes from studies not conducted by, or for, the applicant. If the 505(b)(2) applicant can establish that reliance on FDA's previous findings of safety and effectiveness is scientifically and legally appropriate, it may eliminate the need to conduct certain preclinical or clinical studies of the new product. The FDA may also require companies to perform additional studies or measurements, including clinical trials, to support the change from the previously approved reference drug. The FDA may then approve the new product candidate for all, or some, of the label indications for which the reference drug has been approved, as well as for any new indication sought by the 505(b)(2) applicant.

***Hatch-Waxman Patent Certification and the 30-Month Stay***

Upon approval of an NDA or a supplement thereto, NDA sponsors are required to list with the FDA each patent with claims that cover the applicant's product or an approved method of using the product. Each of the patents listed by the NDA sponsor is published in the Orange Book. When an ANDA applicant files its application with the FDA, the applicant is required to certify to the FDA concerning any patents listed for the reference product in the Orange Book, except for patents covering methods of use for which the ANDA applicant is not seeking approval. To the extent that the Section 505(b)(2) applicant is relying on studies conducted for an already approved product, the applicant is required to certify to the FDA concerning any patents listed for the approved product in the Orange Book to the same extent that an ANDA applicant would.

Specifically, the applicant must certify with respect to each patent that:

- the required patent information has not been filed;
- the listed patent has expired;
- the listed patent has not expired, but will expire on a particular date and approval is sought after patent expiration; or
- the listed patent is invalid, unenforceable or will not be infringed by the new product.

A certification that the new product will not infringe the already approved product's listed patents or that such patents are invalid or unenforceable is called a Paragraph IV certification. If the applicant does not challenge the listed patents or indicates that it is not seeking approval of a patented method of use, the application will not be approved until all the listed patents claiming the referenced product have expired, other than method of use patents involving indications for which the applicant is not seeking approval.

If the ANDA or 505(b)(2) 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 or 505(b)(2) application 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 after the receipt of a Paragraph IV certification automatically prevents the FDA from approving the application until the earlier of 30 months after the receipt of the Paragraph IV notice, expiration of the patent, or a decision in the infringement case that is favorable to the applicant. The ANDA or 505(b)(2) application also will not be approved until any applicable non-patent exclusivity listed in the Orange Book for the branded reference drug has expired.

***Pediatric Studies and Exclusivity***

Under the Pediatric Research Equity Act, an NDA or supplement thereto must contain data that are adequate to assess the safety and effectiveness of the drug product for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. With enactment of the FDASIA in 2012, sponsors must also submit pediatric study plans prior to the assessment data. Those plans must contain an outline of the proposed pediatric study or studies the applicant plans to conduct, including study objectives and design, any deferral or waiver requests, and any other information required by regulation. The applicant, the FDA, and the FDA's internal review committee must then review the information submitted, consult with each other, and agree upon a final plan. The FDA or the applicant may request an amendment to the plan at any time.

The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. Additional requirements and procedures relating to deferral requests and requests for extension of deferrals are contained in FDASIA. Unless and until the FDA promulgates a regulation stating otherwise, the pediatric data requirements do not apply to products with orphan designation.

Pediatric exclusivity is another type of non-patent marketing exclusivity in the United States and, if granted, provides for the attachment of an additional six months of marketing protection to the term of any existing regulatory exclusivity, including the non-patent and orphan exclusivity. This six-month exclusivity may be granted if an NDA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The data do not need to show the product to be effective in the pediatric population studied; rather, if the clinical trial is deemed to fairly respond to the FDA's request, the additional protection is granted. If reports of requested pediatric studies are submitted to and accepted by the FDA within the statutory time limits, whatever statutory or regulatory periods of exclusivity or patent protection cover the product are extended by six months. This is not a patent term extension, but it effectively extends the regulatory period during which the FDA cannot approve another application. With regard to patents, the six-month pediatric exclusivity period will not attach to any patents for which a generic (ANDA or 505(b)(2) NDA) applicant submitted a paragraph IV patent certification, unless the NDA sponsor or patent owner first obtains a court determination that the patent is valid and infringed by a proposed generic product.

***Orphan Drug Designation and Exclusivity***

Under the Orphan Drug Act, the FDA may designate a drug product as an "orphan drug" if it is intended to treat a rare disease or condition, generally meaning that it affects fewer than 200,000 individuals in the United States, or more in cases in which there is no reasonable expectation that the cost of developing and making a drug product available in the United States for treatment of the disease or condition will be recovered from sales of the product. A company must request orphan drug designation before submitting an NDA for that drug for that rare disease or condition. If the request is granted, the FDA will disclose the identity of the therapeutic agent and its potential use. Orphan drug designation does not shorten the PDUFA goal dates for the regulatory review and approval process, although it does convey certain advantages, such as tax benefits and exemptions from the PDUFA application fee.

If a product with orphan designation receives the first FDA approval for the disease or condition for which it has such designation or for a select indication or use within the rare disease or condition for which it was designated, the product generally will receive orphan drug exclusivity. Orphan drug exclusivity means that the FDA may not approve another sponsor's marketing application for the same drug for the same indication for seven years, except in certain limited circumstances. Orphan drug exclusivity does not block the approval of a different drug for the same rare disease or condition, nor does it block the approval

of the same drug for different indications. If a drug or drug product designated as an orphan product ultimately receives marketing approval for an indication broader than what was designated in its orphan product application, it may not be entitled to exclusivity. Orphan exclusivity will not bar approval of another product under certain circumstances, including if a subsequent product with the same drug for the same indication is shown to be clinically superior to the approved product on the basis of greater efficacy or safety, or providing a major contribution to patient care, or if the company with orphan drug exclusivity is not able to meet market demand.

***Patent Term Extension***

A patent claiming a new drug product may be eligible for a limited patent term extension, also known as patent term restriction, under the Hatch-Waxman Act, which permits a patent restoration of up to five years for patent term lost during product development and the FDA regulatory review. Patent term extension is generally available only for drug products whose active ingredient has not previously been approved by the FDA. The restoration period granted is typically one-half the time between the effective date of an IND and the submission date of an NDA, plus the time between the submission date of an NDA and the ultimate approval date. Patent term extension cannot be used to extend the remaining term of a patent past a total of 14 years from the product's approval date. Only one patent applicable to an approved drug product is eligible for the extension, and the application for the extension must be submitted prior to the expiration of the patent in question. A patent that covers multiple drugs for which approval is sought can only be extended in connection with one of the approvals. The United States PTO reviews and approves the application for any patent term extension in consultation with the FDA.

**Pharmaceutical Coverage, Pricing and Reimbursement**

In the United States and markets in other countries, patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Patients are unlikely to use our products unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our products. Significant uncertainty exists as to the coverage and reimbursement status of products approved by the FDA and other government authorities. Even if our product candidate is approved, sales of our products will depend, in part, on the extent to which third-party payors, including government health programs in the United States such as Medicare and Medicaid, commercial health insurers and managed care organizations, provide coverage, and establish adequate reimbursement levels for, such products. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved. Third-party payors are increasingly challenging the prices charged, examining the medical necessity, and reviewing the cost-effectiveness of medical products and services and imposing controls to manage costs. Third-party payors may limit coverage to specific products on an approved list, also known as a formulary, which might not include all of the approved products for a particular indication.

In order to secure coverage and reimbursement for any product that might be approved for sale, a company may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of the product, in addition to the costs required to obtain FDA or other comparable marketing approvals. Nonetheless, product candidates may not be considered medically necessary or cost effective. A decision by a third-party payor not to cover our product candidate could reduce physician utilization of our products once approved and have a material adverse effect on our sales, results of operations and financial condition. Additionally, a payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a drug product does not assure that other payors will also provide coverage and reimbursement for the product, and the level of coverage and reimbursement can differ significantly from payor to payor. Third-party reimbursement and coverage may not be available to enable

us to maintain price levels sufficient to realize an appropriate return on our investment in product development.

The containment of healthcare costs also has become a priority of federal, state and foreign governments and the prices of drugs have been a focus in this effort. Governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit a company's revenue generated from the sale of any approved products. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which a company or its collaborators receive marketing approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Outside the United States, ensuring adequate coverage and payment for our product candidate will face challenges. Pricing of prescription pharmaceuticals is subject to governmental control in many countries. Pricing negotiations with governmental authorities can extend well beyond the receipt of regulatory marketing approval for a product and may require us to conduct a clinical trial that compares the cost effectiveness of our product candidate or products to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in our commercialization efforts.

In the European Union, pricing and reimbursement schemes vary widely from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular drug candidate to currently available therapies or so called health technology assessments, in order to obtain reimbursement or pricing approval. For example, the European Union provides options for its member states to restrict the range of products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. European Union member states may approve a specific price for a product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the product on the market. Other member states allow companies to fix their own prices for products, but monitor and control prescription volumes and issue guidance to physicians to limit prescriptions. Recently, many countries in the European Union have increased the amount of discounts required on pharmaceuticals and these efforts could continue as countries attempt to manage healthcare expenditures, especially in light of the severe fiscal and debt crises experienced by many countries in the European Union. The downward pressure on health care costs in general, particularly prescription drugs, has become intense. As a result, increasingly high barriers are being erected to the entry of new products. 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 European Union member states, and parallel trade, i.e., arbitrage between low-priced and high-priced member states, can further reduce prices. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products, if approved in those countries.

**Healthcare Law and Regulation**

Healthcare providers and third-party payors play a primary role in the recommendation and prescription of drug products that are granted marketing approval. Arrangements with providers, consultants, third-party payors and customers are subject to broadly applicable fraud and abuse, anti-kickback, false claims laws, reporting of payments to physicians and teaching physicians and patient privacy laws and regulations and other healthcare laws and regulations that may constrain our business

and/or financial arrangements. Restrictions under applicable federal and state healthcare laws and regulations, include the following:

- the United States federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, paying, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare and Medicaid;

- the federal civil and criminal false claims laws, including the civil False Claims Act, and civil monetary penalties laws, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false, fictitious or fraudulent or knowingly making, using or causing to made or used a false record or statement to avoid, decrease or conceal an obligation to pay money to the federal government.

- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created additional federal criminal laws that prohibit, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and their respective implementing regulations, including the Final Omnibus Rule published in January 2013, which impose obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;

- the federal transparency requirements known as the federal Physician Payments Sunshine Act, under the Patient Protection and Affordable Care Act, as amended by the Health Care Education Reconciliation Act, or the Affordable Care Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies to report annually to the Centers for Medicare & Medicaid Services, or CMS, within the United States Department of Health and Human Services, information related to payments and other transfers of value made by that entity to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and

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

Some state laws 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 health care providers or marketing expenditures. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

**Healthcare Reform**

A primary trend in the United States healthcare industry and elsewhere is cost containment. There have been a number of federal and state proposals during the last few years regarding the pricing of pharmaceutical and biopharmaceutical products, limiting coverage and reimbursement for drugs and other medical products, government control and other changes to the healthcare system in the United States.

By way of example, the United States and state governments continue to propose and pass legislation designed to reduce the cost of healthcare. In March 2010, the United States Congress enacted the

Affordable Care Act, which, among other things, includes changes to the coverage and payment for products under government health care programs. Among the provisions of the Affordable Care Act of importance to our potential drug candidates are:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs, although this fee would not apply to sales of certain products approved exclusively for orphan indications;

- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's Medicaid rebate liability;

- expanded manufacturers' rebate liability under the Medicaid Drug Rebate Program by increasing the minimum rebate for both branded and generic drugs and revising the definition of "average manufacturer price," or AMP, for calculating and reporting Medicaid drug rebates on outpatient prescription drug prices and extending rebate liability to prescriptions for individuals enrolled in Medicare Advantage plans;

- addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected;

- expanded the types of entities eligible for the 340B drug discount program;

- established the Medicare Part D coverage gap discount program by requiring manufacturers to provide a 50% point-of-sale-discount off the negotiated price of applicable brand drugs to eligible beneficiaries during their coverage gap period as a condition for the manufacturers' outpatient drugs to be covered under Medicare Part D;

- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;

- the Independent Payment Advisory Board, or IPAB, which has authority to recommend certain changes to the Medicare program to reduce expenditures by the program that could result in reduced payments for prescription drugs. However, the IPAB implementation has been not been clearly defined. PPACA provided that under certain circumstances, IPAB recommendations will become law unless Congress enacts legislation that will achieve the same or greater Medicare cost savings; and

- established the Center for Medicare and Medicaid Innovation within CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending. Funding has been allocated to support the mission of the Center for Medicare and Medicaid Innovation from 2011 to 2019.

Other legislative changes have been proposed and adopted in the United States since the Affordable Care Act was enacted. For example, in August 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 2012 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 up to 2% per fiscal year, which went into effect in April 2013 and will remain in effect through 2024 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several 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.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. Such reforms could have an adverse effect on anticipated revenues from product candidates that we may successfully develop and for which we may obtain marketing approval and may affect our overall financial condition and ability to develop product candidates.

***Other Federal and State Regulatory Requirements***

Several states now require prescription drug companies to report expenses relating to the marketing and promotion of drug products and to report gifts and payments to individual physicians in these states. Other states prohibit various other marketing-related activities. Still other states require the posting of information relating to clinical studies and their outcomes. In addition, California, Connecticut, Nevada, and Massachusetts require pharmaceutical companies to implement compliance programs and/or marketing codes. Several additional states are considering similar proposals. Compliance with these laws is difficult and time consuming, and companies that do not comply with these state laws face civil penalties.

***Regulation and Procedures Governing Approval of Medicinal Products in the European Union***

In addition to regulations in the United States, we will be subject to a variety of foreign regulations governing clinical trials and commercial sales and distribution of our product candidate to the extent we choose to sell any products outside of the United States. Whether or not we obtain FDA approval for a product, we must obtain approval of a product by the comparable regulatory authorities of foreign countries before we can commence clinical trials or marketing of the product in those countries. The approval process varies from country to country and the time may be longer or shorter than that required for FDA approval. The requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary greatly from country to country. As in the United States, post-approval regulatory requirements, such as those regarding product manufacture, marketing, or distribution would apply to any product that is approved outside the United States.

The process governing the marketing authorization of medicinal products in the European Union entails satisfactory completion of preclinical studies and adequate and well-controlled clinical trials to establish the safety, quality and efficacy of the medicinal product for each proposed therapeutic indication. It also requires the submission to the relevant competent authorities of a marketing authorization application, or MAA, and granting of a marketing authorization by these authorities before the product can be marketed and sold in the European Union.

*Clinical Trial Approval*

Pursuant to the currently applicable Clinical Trials Directive 2001/20/EC and the Directive 2005/28/EC on cGCP, an applicant must obtain the approval from the competent national authority of the European Union Member State in which the clinical trial is to be conducted. If the clinical trial is conducted in different European Union Member States, the competent authorities in each of these European Union Member States must provide their approval for the conduct of the clinical trial. Furthermore, the applicant may only start a clinical trial at a specific study site after the competent ethics committee has issued a favorable opinion.

In April 2014, the European Union adopted a new Clinical Trials Regulation (EU) No 536/2014, which is set to replace the current Clinical Trials Directive 2001/20/EC. The new Clinical Trials Regulation will be directly applicable in and binding in all 28 European Union Member States without the need for any national implementing legislation. The new Clinical Trials Regulation (EU) No 536/2014 will become applicable no earlier than 28 May 2016. It will overhaul the current system of approvals for clinical trials in the European Union. Specifically, the new legislation aims at simplifying and streamlining the approval of clinical trials in the European Union. Under the new coordinated procedure for the approval of clinical

trials, the sponsor of a clinical trial will be required to submit a single application for approval of a clinical trial to a reporting European Union Member State, or RMS, through a European Union portal. The submission procedure will be the same irrespective of whether the clinical trial is to be conducted in a single European Union Member State or in more than one European Union Member State. The Clinical Trials Regulation also aims to streamline and simplify the rules on safety reporting for clinical trials. As an example, suspected unexpected serious adverse reactions can be reported by the sponsor directly to EudraVigilance instead of being submitted to each European Union Member State.

*Marketing Authorization*

In the European Union, marketing authorizations for medicinal products can be obtained through several different procedures founded on the same basic regulatory process.

The centralized procedure provides for the grant of a single marketing authorization that is valid for all European Union Member States. The centralized procedure is compulsory for medicinal products produced by certain biotechnological processes, products designated as orphan medicinal products, and products with a new active substance indicated for the treatment of certain diseases. It is optional for those products that are highly innovative or for which a centralized process is in the interest of patients. Under the centralized procedure in the European Union, the maximum timeframe for the evaluation of a marketing authorization application is 210 days (excluding clock stops, when additional written or oral information is to be provided by the applicant in response to questions asked by the Committee for Medicinal Products for Human Use, or CHMP). Accelerated evaluation may be granted by the CHMP in exceptional cases. These are defined as circumstances in which a medicinal product is expected to be of a "major public health interest." Three cumulative criteria must be fulfilled in such circumstances: the seriousness of the disease, such as heavy disabling or life-threatening diseases, to be treated; the absence or insufficiency of an appropriate alternative therapeutic approach; and anticipation of high therapeutic benefit. In these circumstances, the European Medicines Agency, or EMA, ensures that the opinion of the CHMP is given within 150 days.

The decentralized procedure provides for approval by one or more other "concerned" European Union Member States of an assessment of an application for marketing authorization conducted by one European Union Member State, known as the reference European Union Member State. In accordance with this procedure, an applicant submits an application for marketing authorization to the reference European Union Member State and the concerned European Union Member States. This application is identical to the application that would be submitted to the EMA for authorization through the centralized procedure. The reference European Union Member State prepares a draft assessment and drafts of the related materials within 120 days after receipt of a valid application. The resulting assessment report is submitted to the concerned European Union Member States who, within 90 days of receipt must decide whether to approve the assessment report and related materials. If a concerned European Union Member State cannot approve the assessment report and related materials due to concerns relating to a potential serious risk to public health, disputed elements may be referred to the European Commission, whose decision is binding on all European Union Member States. In accordance with the mutual recognition procedure, the sponsor applies for national marketing authorization in one European Union Member State. Upon receipt of this authorization the sponsor can then seek the recognition of this authorization by other European Union Member States. Authorization in accordance with either of these procedures will result in authorization of the medicinal product only in the reference European Union Member State and in the other concerned European Union Member States.

A marketing authorization may be granted only to an applicant established in the European Union. Regulation (EC) No 1901/2006 provides that prior to obtaining a marketing authorization in the European Union, an applicant must demonstrate compliance with all measures included in a Pediatric Investigation Plan, or PIP, approved by the Pediatric Committee of the EMA, covering all subsets of the pediatric

population, unless the EMA has granted a product-specific waiver, class waiver, or a deferral for one or more of the measures included in the PIP.

*Regulatory Data Exclusivity in the European Union*

In the European Union, innovative medicinal products authorized in the European Union on the basis of a full marketing authorization application (as opposed to an application for marketing authorization that relies on data available in the marketing authorization dossier for another, previously approved, medicinal product) are entitled to eight years of data exclusivity. During this period, applicants for authorization of generics of these innovative products cannot rely on data contained in the marketing authorization dossier submitted for the innovative medicinal product. Innovative medicinal products are also entitled to 10 years' market exclusivity. During this 10 year period no generic of this medicinal product can be placed on the European Union market. The overall 10 year period will be extended to a maximum of 11 years if, during the first eight years of those 10 years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to authorization, is held to bring a significant clinical benefit in comparison with existing therapies. Even if a compound is considered to be a new chemical entity so that the innovator gains the prescribed period of data exclusivity, another company may market another version of the product if such company obtained marketing authorization based on an MAA with a complete independent data package of pharmaceutical tests, preclinical tests and clinical trials.

*Periods of Authorization and Renewals*

A marketing authorization is valid for five years, in principle, and it may be renewed after five years on the basis of a reevaluation of the risk benefit balance by the EMA or by the competent authority of the relevant European Union Member State. To that end, the marketing authorization holder must provide the EMA or the relevant competent authority of the European Union Member State with a consolidated version of the file in respect of quality, safety and efficacy, including all variations introduced since the marketing authorization was granted, at least six months before the marketing authorization ceases to be valid. Once renewed, the marketing authorization is valid for an unlimited period, unless the European Commission or the relevant competent authority of the European Union Member State decides, on justified grounds relating to pharmacovigilance, to proceed with one additional five year renewal period. Any marketing authorization that is not followed by the marketing of the medicinal product on the European Union market (in the case of the centralized procedure) or on the market of the European Union Member State which delivered the marketing authorization within three years after authorization ceases to be valid.

*Regulatory Requirements after Marketing Authorization*

Similarly to the U.S., both marketing authorization holders and manufacturers of medicinal products are subject to comprehensive regulatory oversight by the EMA and the competent authorities of the individual European Union Member States both before and after grant of the manufacturing and marketing authorizations.

The holder of a European Union marketing authorization for a medicinal product must also comply with European Union pharmacovigilance legislation and its related regulations and guidelines which entail many requirements for conducting pharmacovigilance, or the assessment and monitoring of the safety of medicinal products. These rules can impose on central marketing authorization holders for medicinal products the obligation to conduct a labor intensive collection of data regarding the risks and benefits of marketed products and to engage in ongoing assessments of those risks and benefits, including the possible requirement to conduct additional clinical studies.

The manufacturing process for medicinal products in the European Union is highly regulated and regulators may shut down manufacturing facilities that they believe do not comply with regulations. Manufacturing requires a manufacturing authorization, and the manufacturing authorization holder must comply with various requirements set out in the applicable European Union laws, regulations and guidance, including Directive 2001/83/EC, Directive 2003/94/EC, Regulation (EC) No 726/2004 and the European Commission Guidelines for Good Manufacturing Practice. These requirements include compliance with European Union cGMP standards when manufacturing medicinal products and active pharmaceutical ingredients, including the manufacture of active pharmaceutical ingredients outside of the European Union with the intention to import the active pharmaceutical ingredients into the European Union. Similarly, the distribution of medicinal products into and within the European Union is subject to compliance with the applicable European Union laws, regulations and guidelines, including the requirement to hold appropriate authorizations for distribution granted by the competent authorities of the European Union Member States.

In the European Union, the advertising and promotion of our products are subject to European Union Member States' laws governing promotion of medicinal products, interactions with physicians, misleading and comparative advertising and unfair commercial practices. In addition, other legislation adopted by individual European Union Member States may apply to the advertising and promotion of medicinal products. These laws require that promotional materials and advertising in relation to medicinal products comply with the product's Summary of Product Characteristics, or SmPC, as approved by the competent authorities. Promotion of a medicinal product that does not comply with the SmPC is considered to constitute off-label promotion. The off-label promotion of medicinal products is prohibited in the European Union. The applicable laws at the European Union level and in the individual European Union Member States also prohibit the direct-to-consumer advertising of prescription-only medicinal products. These laws may further limit or restrict the advertising and promotion of our products to the general public and may also impose limitations on our promotional activities with health care professionals.

*Orphan Drug Designation and Exclusivity*

Regulation (EC) No 141/2000 and Regulation (EC) No. 847/2000 provide that a product can be designated as an orphan medicinal product by the European Commission if its sponsor can establish: that the product is intended for the diagnosis, prevention or treatment of (1) a life-threatening or chronically debilitating condition affecting not more than five in 10,000 persons in the European Union when the application is made, or (2) a life-threatening, seriously debilitating or serious and chronic condition in the European Union and that without incentives the medicinal product is unlikely to be developed. For either of these conditions, the applicant must demonstrate that there exists no satisfactory method of diagnosis, prevention or treatment of the condition in question that has been authorized in the European Union or, if such method exists, the medicinal product will be of significant benefit to those affected by that condition. Once authorized, orphan medicinal products are entitled to 10 years of market exclusivity in all European Union Member States and in addition a range of other benefits during the development and regulatory review process including scientific assistance for study protocols, authorization through the centralized marketing authorization procedure covering all member countries and a reduction or elimination of registration and marketing authorization fees. However, marketing authorization may be granted to a similar medicinal product with the same orphan indication during the 10 year period with the consent of the marketing authorization holder for the original orphan medicinal product or if the manufacturer of the original orphan medicinal product is unable to supply sufficient quantities. Marketing authorization may also be granted to a similar medicinal product with the same orphan indication if this product is safer, more effective or otherwise clinically superior to the original orphan medicinal product. The period of market exclusivity may, in addition, be reduced to six years if it can be demonstrated on the basis of available evidence that the original orphan medicinal product is sufficiently profitable not to justify maintenance of market exclusivity.

**Employees**

We have leveraged skilled experts, consultants, CROs, and contractors to manage our clinical operations, under the leadership and direction of our management. We will expand our infrastructure to manage our clinical, finance and commercial operations with additional full-time employees.

We have nine employees who are providing services to us either under our Payroll Services Agreement or directly employed by us, three of whom hold Ph.D. or M.D. degrees. Of these employees, six are engaged in development activities and three are engaged in support administration, including business development and finance. None of these employees are represented by labor unions or covered by collective bargaining agreements. We consider our relationships with these employees to be good.

**Facilities**

Our offices are located at a 2,930 square foot facility in Boston, Massachusetts used primarily for corporate functions. The lease for this space expires in December 2016 and we have rights to this space pursuant to our Payroll Services Agreement with the Relamorelin Company. We plan to move to a 6,830 square foot facility in Boston, Massachusetts pursuant to a new lease for a term beginning in April 2016 and expiring in April 2021.

**Legal Proceedings**

We are not currently a party to any material legal proceedings.

## MANAGEMENT

### Executive Officers and Directors

The following table sets forth the names, ages and positions of our directors and executive officers. Each executive officer provides services to us pursuant to the Payroll Services Agreement and will become an employee of ours prior to consummation of this offering. Drs. Gottesdiener, Van der Ploeg and Fiedorek and Mr. Henderson will not be contractually obligated to spend a specified number of hours per week providing consulting services to the Relamorelin Company, but their employment letters with us will permit them to render consulting services to the Relamorelin Company, provided that such consulting services do not prevent them from carrying out their duties and responsibilities to us. Each executive officer will be elected annually and will serve until his re-election, or earlier resignation or removal. The executive officers and directors have served as executive officers and directors of us, the LLC entity, the Predecessor Company and/or the Relamorelin Company during the periods set forth below. We refer to each of these persons as our executive officers.

| Name | Age | Position(s) |
|---|---|---|
| Keith M. Gottesdiener, M.D. | 62 | Chief Executive Officer and Director |
| Bart Henderson | 57 | President & Founder |
| Lex H.T. Van der Ploeg, Ph.D. | 60 | Chief Scientific Officer |
| Fred T. Fiedorek, M.D. | 61 | Chief Medical Officer |
| Todd Foley | 44 | Director |
| Ed Mathers | 55 | Director |
| Neil Exter | 57 | Director |
| Christophe R. Jean | 60 | Director |
| Jonathan T. Silverstein, J.D. | 49 | Director |
| David Meeker | 61 | Director |
| David McGirr | 61 | Director |

***Keith M. Gottesdiener, M.D.*** | *Chief Executive Officer*

Dr. Gottesdiener has been Chief Executive Officer and a member of the board of directors since October 2011. He joined the Predecessor Company after 16 years at Merck Research Laboratories, or Merck. Dr. Gottesdiener joined Merck early clinical development in 1995, helping to transition compounds from the bench to the bedside and through to proof of concept. He held positions of increasing responsibility, eventually leading Merck's early clinical development across all therapeutic areas from 2001 through early 2006. From 2006 to 2011, he was a leader of Merck's late clinical development organization, first overseeing the development of Merck's infectious diseases and vaccine products through pivotal trials, registration, and life cycle management, including Gardasil™ (HPV Vaccine), Rotateq™ (rotavirus vaccine), Zostavax™ (zoster vaccine) and Isentress™ (HIV integrase inhibitor), among others. In 2008, Dr. Gottesdiener was appointed Late Stage Therapeutic Group Leader, and in that role led Merck's late-stage clinical development efforts (from Phase 2 thru patent expiry) across all therapeutic areas. After Merck's merger with Schering Plough in 2009, he continued as co-head of late development. Dr. Gottesdiener received his B.A. from Harvard College and his M.D. from the University of Pennsylvania. He completed his residency and fellowship at the Brigham and Women's Hospital-Beth Israel Medical Center-Dana Farber Cancer Institute Children's Hospital programs. After his fellowship, Dr. Gottesdiener did postdoctoral research in the laboratory of Dr. Jack Strominger at Dana Farber Cancer Institute working on the molecular immunology of the T-cell receptor. In 1986, he joined the faculty as an assistant professor at Columbia University, started an independent research laboratory with NIH RO-1 funding, focusing on gene transcription, and was Associate Clinical Professor of Medicine at the time he left to join Merck in 1995. Dr. Gottesdiener is also currently a director and the chief executive officer of the Relamorelin Company and the LLC entity. He will resign as Chief Executive Officer prior to

the consummation of this offering. We believe that Dr. Gottesdiener's detailed knowledge of our company, his extensive experience in the pharmaceutical industry as a senior executive, and his research work for both medical and academic institutions provide him with the qualifications to serve as director of our company.

***Bart Henderson, MBA*** | *President & Founder*

Mr. Henderson has been President since February 2010 and is a founder of the Predecessor Company. Previously, he was Entrepreneur-in-Residence at MPM Capital and Chief Business Officer of Radius, where he was a founding employee and led the acquisition of four pipeline programs. Mr. Henderson founded sales and marketing at Vertex when the company launched its first product, broadened its product pipeline, signed corporate partnerships valued at $1.2 billion, and raised $715 million in financing. He founded business development at Microbia (now Ironwood Pharmaceuticals Inc.), which signed its first corporate partnerships and significantly expanded its pipeline during his tenure. Mr. Henderson is also currently the President and Treasurer of the Relamorelin Company and the LLC entity, positions from which he will resign prior to the consummation of this offering. In addition, Mr. Henderson held marketing management positions at Amgen and Merck. He holds an MBA from Dartmouth's Tuck School of Business and a B.A. from Amherst College.

***Lex H.T. Van der Ploeg, Ph.D.*** | *Chief Scientific Officer*

Dr. Van der Ploeg has been Chief Scientific Officer since October 2011. He has more than 25 years of drug development experience focused on obesity, metabolic disorders, oncology, and neurodegenerative diseases. Before joining the Predecessor Company, he was Senior Vice President of Integrative Medicine and Translational Science at Abraxis Bioscience and Head of R&D at Abraxis Health; both companies were acquired by Celgene Corporation. Prior to that, he held R&D leadership roles at Merck directing drug development programs in metabolism, oncology, and neurodegenerative diseases as Vice President, Basic Research and Site Head, Merck Boston; Site Head, Merck San Diego; and Head, Obesity Research for Merck Rahway and Banyu, Japan. Previously, Dr. Van der Ploeg was an associate professor in the Department of Genetics and Development at Columbia University. He has received numerous awards and grants for his research and has published more than 200 peer-reviewed research papers. Dr. Van der Ploeg is a named inventor on more than 50 patents and patent applications. Dr. Van der Ploeg is also currently the Chief Scientific Officer of the Relamorelin Company and the LLC entity, positions from which he will resign prior to the consummation of this offering. He received an M.S. in Biochemistry from the University of Amsterdam and a Ph.D. in Biochemistry/Enzymology/Genetics from the University of Amsterdam/Netherlands Cancer Institute.

***Fred T. Fiedorek, M.D.*** | *Chief Medical Officer*

Dr. Fiedorek has been Chief Medical Officer since October 2014, joining us after nearly 14 years at Bristol-Myers Squibb, or BMS. He has extensive drug development experience across many therapeutic areas, ranging from early development through Phase 4 and commercial launch. Dr. Fiedorek has particular expertise in diabetes, metabolic disorders and cardiovascular disease, most recently serving as Senior Vice President, Head of Cardiovascular and Metabolic Development at BMS, where he led Phase 2 through Phase 4 global development for these therapeutic areas. Under his leadership, several new medicines achieved successful marketing authorization, including Onglyza® (saxagliptin), Farxiga™ (dapagliflozin), Eliquis® (apixaban), Myalept™ (metreleptin), Bydureon® Dual Chamber Pen, and Glucovance® (metformin/glyburide). While at BMS, Dr. Fiedorek also co-led exploratory development, helping to transition compounds from discovery stage to proof-of-concept patient trials. In addition, Dr. Fiedorek co-directed the Clinical Science Committee charged with providing scientific, regulatory, and biostatistical review of Phase 1 through Phase 4 clinical trials; he was a member of the Medical Review Group charged with oversight of potential emerging safety signals from marketed medicines or compounds

in development; and he participated in joint development committees for BMS alliances with Astra-Zeneca, Pfizer, Otsuka, KAI Pharmaceuticals, Solvay, and Merck. Prior to joining BMS, Dr. Fiedorek held positions of increasing responsibility at Glaxo-Wellcome in Research Triangle Park, or RTP, and was International Project Leader for a Phase 3 metabolic drug development program prior to his move to BMS. Dr. Fiedorek is also currently the Chief Medical Officer of the Relamorelin Company and the LLC entity, positions from which he will resign prior to consummation of this offering. Dr. Fiedorek received his B.A. from Yale University and his M.D. from Harvard Medical School. He completed residency and fellowship training in Internal Medicine and Endocrinology & Metabolism at Washington University in St. Louis, including post-doctoral research on the genetics of animal models of diabetes and obesity. He also served on the faculties at Washington University School of Medicine in St. Louis and the University of North Carolina in Chapel Hill School of Medicine, including an adjunct clinical appointment while at Glaxo-Wellcome in RTP.

***Todd Foley***

Mr. Foley has served as a member of our board of directors since July 2014. Mr. Foley is a managing director with MPM Capital, a venture capital firm, which he joined in 1999. Prior to joining MPM, Mr. Foley worked in business development at Genentech and in management consulting with Arthur D. Little. Mr. Foley currently serves as a member of the board of directors of Chiasma, Inc., Clinical Ink, Inc., Iconic Therapeutics, Inc., Selexys Pharmaceuticals Corp. and Valeritas, Inc. Mr. Foley received a B.S. in chemistry from the Massachusetts Institute of Technology and an MBA from Harvard Business School. We believe that Mr. Foley's broad experience in the life sciences industry as a venture capitalist, as well as his service on the boards of directors of numerous companies provide him with the qualifications to serve as a director of our company.

***Ed Mathers***

Mr. Mathers has served as a member of our board of directors since March 2013. He has been a Partner at New Enterprise Associates, or NEA, a venture capital firm, since August 2008. Mr. Mathers currently serves on the boards of directors of Envisia Therapeutics Inc., Intarcia Therapeutics, Inc., Liquidia Technologies, Inc., Lumos Pharma, Inc., Lumena Pharmaceuticals, Inc., Mirna Therapeutics, Inc., Ra Pharmaceuticals, Inc., and Satori Pharmaceuticals Incorporated, all of which are biotechnology companies. In addition, Mr. Mathers is a member of the Biotechnology Industry Organization board, the Southeast BIO board and the North Carolina State Physical and Mathematical Sciences Foundation board. Prior to joining NEA, Mr. Mathers served in various corporate development roles at MedImmune, Inc., a biotechnology company that was acquired by AstraZeneca PLC in 2007, culminating in the position of Executive Vice President, Corporate Development and Venture. In this role, he also led the company's venture capital subsidiary, MedImmune Ventures, Inc., from 2002 to 2008. Mr. Mathers was a director of MedImmune, LLC, from 2007 to 2008. From 2000 to 2002, Mr. Mathers was Vice President, Marketing and Corporate Licensing and Acquisitions at Inhale Therapeutic Systems, Inc., a biopharmaceutical company, which is now known as Nektar Therapeutics, Inc. Previously, for 15 years, Mr. Mathers was at Glaxo Wellcome, Inc., where he held sales and marketing positions of increasing responsibility. Mr. Mathers received a B.S. in chemistry from North Carolina State University. We believe that Mr. Mather's extensive experience in the life sciences industry as a venture capitalist and senior executive, as well as his service on the boards of directors of numerous companies provide him with the qualifications to serve as a director of our company.

***Neil Exter***

Mr. Exter has served as a member of our board of directors since April 2014. He is a partner at Third Rock Ventures, where he plays an integral role in the formation, development, business strategy, and business development efforts of portfolio companies. He has more than 20 years of business development

and strategic experience, facilitating the successful development and implementation of operations and collaborations across the spectrum of newly emerging and established biotech companies. Prior to joining Third Rock Ventures, Mr. Exter was CBO of Alantos Pharmaceuticals and led the sale of that company to Amgen. Previously, he served as Vice President of Business Development for Millennium Pharmaceuticals. Mr. Exter is a board member of CytomX Therapeutics, Cibiem, Lotus Tissue Repair, Coridea NC1, Coridea NC2, Element Science, and Seventh Sense. He is a member of the Research Committee of Children's Hospital Boston, the investment committee of the Innovation Research Fund at Partners Healthcare, the Board of Directors of the New England Venture Capital Association, the Advisory Council of the Electrical and Computer Engineering Department at Cornell University, and the Board of Visitors of Columbia College. He holds an MBA as a Baker Scholar from Harvard Business School, an M.S. from Stanford University, and a B.S. from Cornell University. We believe that Mr. Exter's extensive experience in the life sciences industry as a venture capitalist and senior executive, as well as his service on the boards of directors of numerous companies provide him with the qualifications to serve as a director of our company.

***Christophe R. Jean***

Mr. Jean has served as a member of our board of directors since April 2015. He is Executive Vice President of Corporate Strategy, Business Development, Alliances and M&A for the Ipsen Group, a position he assumed in 2013 after serving for 11 years in the position of Executive Vice-President, Chief Operating Officer, with responsibility for all commercial operations and medical affairs worldwide as well as Ipsen's therapeutic area franchises. Prior to joining Ipsen, Mr. Jean was President and CEO for the pharmaceutical activities of the Pierre Fabre Group and President of Europe, Middle East, and Africa for Novartis' Pharmaceutical Division. Prior to the merger of Ciba-Geigy and Sandoz that formed Novartis, he held a number of marketing and management positions in Europe and Latin America for Ciba-Geigy, culminating as Head of Finance and IT Worldwide and Member of the Pharma Executive Committee. Mr. Jean is a member of the Ipsen Group Executive Committee, the Supervisory Board of Diaxonhit, and the European Biopharmaceutical Enterprises Board. He holds an MBA from Harvard Business School. We believe that Mr. Jean's extensive experience in the life sciences industry as a senior executive provides him with the qualifications to serve as a director of our company.

***Jonathan T. Silverstein, J.D.***

Mr. Silverstein has served as a member of our board of directors since August 2015. He is a Partner and a Co-Head of Global Private Equity at OrbiMed, the world's largest fully dedicated healthcare fund manager. Mr. Silverstein joined OrbiMed in 1999 to focus on private equity and structured transactions in small-capitalization public biotechnology and medical device companies. From 2012 through 2015, *Forbes*® magazine has named Mr. Silverstein one of the top 100 venture capitalists in the world in its "Forbes Midas List" of top technology investors. Mr. Silverstein has a J.D. and an M.B.A. from the University of San Diego, and a B.A. in Economics from Denison University. We believe that Mr. Silverstein's extensive experience in life sciences venture capital provides him with the qualifications to serve as a director for our company.

***David Meeker***

Dr. Meeker has served as a member of our board of directors since November 2015. Dr. Meeker has served as President and Chief Executive officer of Genzyme, a unit of Sanofi, a global biotechnology company, since October 2011. Dr. Meeker oversees the company's two business units—Rare Diseases and Multiple Sclerosis. As an Executive Vice President of Sanofi, he is a member of Sanofi's Executive Committee. Dr. Meeker joined Genzyme in 1994 as Medical Director to work on the Cystic Fibrosis Gene Therapy program. Subsequently, as Vice President, Medical Affairs, he was responsible for the development of rare disease therapies that today represent transformative and life-saving advancements in

medicine for patients. Prior to Genzyme's merger with Sanofi in 2011, Dr. Meeker was Genzyme's Chief Operating Officer, responsible for its commercial organization, overseeing its business units, country management organization and global market access functions. He played an important role in the integration with Sanofi. Prior to joining Genzyme, Dr. Meeker was the director of the Pulmonary Critical Care Fellowship at the Cleveland Clinic and an assistant professor of medicine at Ohio State University. He has authored more than 40 articles and multiple book chapters. Dr. Meeker received his M.D. from the University of Vermont Medical School. He completed the Advanced Management Program at Harvard Business School in 2000. We believe that Dr. Meeker's deep experience as a senior executive at global pharmaceutical companies and involvement in the development and commercialization of pharmaceutical product candidates for the treatment of rare and ultra-rare diseases provide him with the qualifications to serve as a director of our company.

***David McGirr***

Mr. McGirr has served as a member of our board of directors since November 2015. Mr. McGirr serves as a director of Relypsa, Inc., a pharmaceutical company focused on polymer science, Insamed Incorporated, a pharmaceutical company devoted to the treatment of rare diseases, and Roka Bioscience, a molecular diagnostics company. From March 2013 until June 2014, Mr. McGirr was Senior Advisor to the chief executive officer of Cubist Pharmaceuticals and from November 2002 to March 2013, Mr. McGirr was Senior Vice President and Chief Financial Officer of Cubist. Prior to joining Cubist in 2002, Mr. McGirr was the President and Chief Operating Officer of hippo inc, an internet technology, venture-financed company. Mr. McGirr served as a member of hippo's board of directors from 1999 to 2003. From 1996 to 1999, he was the President of GAB Robins North America, Inc., a risk management company, serving also as Chief Executive Officer from 1997 to 1999. Mr. McGirr was a private equity investor from 1995 to 1996. From 1978 to 1995, Mr. McGirr served in various positions within the S.G. Warburg Group, ultimately as Chief Financial Officer, Chief Administrative Officer and Managing Director of S.G. Warburg & Co., Inc., a position held from 1992 to 1995. Mr. McGirr received a B.Sc. in Civil Engineering from the University of Glasgow and received an M.B.A. from The Wharton School at the University of Pennsylvania. Mr. McGirr has been designated an audit committee financial expert as defined in applicable SEC rules. We believe that Mr. McGirr's senior-level executive experience in a variety of industries, including in the life sciences industry, provides him with the qualifications to serve as a director of our company.

**Composition of the Board of Directors after this Offering**

Our amended and restated bylaws will provide that our board of directors will consist of such number of directors as our board of directors may determine from time to time. Our board of directors currently consists of eight directors. Immediately upon the consummation of this offering, our board of directors will consist of (i) one director designated by MPM Capital, who is currently Todd Foley, and who will be continuing as a director following the offering, (ii) one director designated by NEA, who is currently Ed Mathers, and who will be continuing as a director following the offering, (iii) one director designated by Third Rock Ventures, who is currently Neil Exter, and who will be continuing as a director following the offering, (iv) one director designated by OrbiMed Private Investments V, LP, who is currently Jonathan Silverstein, and who will be continuing as a director following the offering, (v) one director designated by Sutrepa SAS, who is currently Christophe Jean, and who will be continuing as a director following the offering, and (vi) David Meeker, David McGirr and our chief executive officer, each of whom will be continuing as a director following the offering. Our board of directors has determined that all of our directors, other than Dr. Gottesdiener, our chief executive officer, are independent for the purpose of serving on our board of directors under the independence standards promulgated by NASDAQ.

Our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the closing of this offering will provide that our board of directors will be divided

into three classes, Class I, Class II and Class III, with members of each class serving staggered three-year terms. Upon the closing of this offering, the members of the classes will be divided as follows

- our Class I directors will be and , and their terms will expire at the annual meeting of stockholders to be held in ;
- our Class II directors will be , and , and their terms will expire at the annual meeting of stockholders to be held in ; and
- our Class III directors will be and , and their terms will expire at the annual meeting of stockholders to be held in .

Upon the expiration of the term of a class of directors, directors in that class will be eligible to be elected for a new three-year term at the annual meeting of stockholders in the year in which their term expires.

**Board Leadership Structure**

Our board of directors is currently led by our chief executive officer. Our board of directors believes that this leadership structure is the most effective for us at this time. Because our chief executive officer is closest to the many facets of our business, our board of directors believes that the chief executive officer is in the best position to lead our board of directors most effectively. In addition, as the chief executive officer is directly involved in managing the company, and this leadership structure facilitates timely communication with the board on critical business matters. Furthermore, we believe that this leadership structure is appropriate for our company because (i) our chief executive officer conveys a singular, cohesive message to our stockholders, employees, industry partners and the investment community and (ii) this structure eliminates any ambiguity as to who is accountable for the company's performance. Our directors and management team engage frequently and directly in the flow of information and ideas and we believe our leadership structure facilitates the quality, quantity and timeliness of the information flow and communication. Our board of directors believes that there is a well-functioning and effective balance between strong company leadership and oversight by active, independent directors. Our board will consider in the future whether to designate a chair.

**Lead Independent Director**

Our board of directors has appointed to serve as our lead independent director. As lead independent director, presides over periodic meetings of our independent directors, serves as a liaison between our chief executive officer and the independent directors and performs such additional duties as our board of directors may otherwise determine and delegate.

**Board Committees**

Prior to the consummation of this offering, our board of directors will establish the following committees: an audit committee, a compensation committee and a governance and nominating committee. The initial composition and responsibilities of each committee are described below. Members will serve on these committees until their resignation or until otherwise determined by our board of directors.

***Audit Committee***

Our audit committee will provide oversight of our accounting and financial reporting process, the audit of our financial statements and our internal control function. Among other matters, the audit committee will be responsible for the following: assisting the board of directors in oversight of the independent auditors' qualifications, independence and performance; the engagement, retention and compensation of the independent auditors; reviewing the scope of the annual audit; reviewing and discussing with management and the independent auditors the results of the annual audit and the review of

our quarterly financial statements, including the disclosures in our annual and quarterly reports filed with the SEC; reviewing our risk assessment and risk management processes; establishing procedures for receiving, retaining and investigating complaints received by us regarding accounting, internal accounting controls or audit matters; and approving audit and permissible non-audit services provided by our independent auditor.

The initial members of our audit committee are David McGirr, who is the chair of the committee, Christoph Jean and David Meeker. All members of our audit committee meet the requirements for financial literacy under the applicable rules and regulations of the SEC and NASDAQ. Our board of directors has determined that David McGirr is an audit committee financial expert as defined under the applicable rules of the SEC and has the requisite financial sophistication as defined under the applicable rules and regulations of NASDAQ. All of the members of our audit committee are independent directors as defined under the applicable rules and regulations of the SEC and NASDAQ.

***Compensation Committee***

Our compensation committee will adopt and administer the compensation policies, plans and benefit programs for our executive officers and all other members of our executive team. Our compensation committee will also be responsible for making recommendations regarding non-employee director compensation to the full board of directors. In addition, among other things, our compensation committee will evaluate annually, in consultation with the board of directors, the performance of our chief executive officer, review and approve corporate goals and objectives relevant to compensation of our chief executive officer and other executives and evaluate the performance of these executives in light of those goals and objectives. Our compensation committee will also adopt and administer our equity compensation plans. The initial members of our compensation committee are Neil Exter, who is the chair of the committee, Todd Foley and Jonathan Silverstein. All of the members of our compensation committee are independent under the applicable rules and regulations of the SEC and NASDAQ, and qualify as outside directors under Section 162(m) of the Code.

***Governance and Nominating Committee***

Our governance and nominating committee will be responsible for, among other things, making recommendations regarding corporate governance, the composition of our board of directors, the identification, evaluation and nomination of director candidates and the structure and composition of committees of our board of directors. In addition, our governance and nominating committee will oversee our corporate governance guidelines, approve our committee charters, oversee compliance with our code of business conduct and ethics, contribute to succession planning, review policies and procedures with respect to our related party transactions policy and oversee the board self-evaluation process. The initial members of our governance and nominating committee are David Meeker, who is the chair of the committee, Ed Mathers and David McGirr. All of the members of our governance and nominating committee are independent under the applicable rules and regulations of NASDAQ.

***Compensation Committee Interlocks and Insider Participation***

None of the members of our compensation committee is or has at any time during the past year been one of our officers or employees. None of our executive officers currently serves or in the past year has served as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving on our board of directors or compensation committee.

**Role of the Board in Risk Oversight**

The audit committee of the board of directors is primarily responsible for overseeing our risk management processes on behalf of the board of directors. Going forward, we expect that the audit

committee will receive reports from management at least quarterly regarding our assessment of risks. In addition, the audit committee reports regularly to the board of directors, which also considers our risk profile. The audit committee and the board of directors focus on the most significant risks we face and our general risk management strategies. While the board of directors oversees our risk management, management is responsible for day-to-day risk management processes. Our board of directors expects management to consider risk and risk management in each business decision, to proactively develop and monitor risk management strategies and processes for day-to-day activities and to effectively implement risk management strategies adopted by the audit committee and the board of directors. We believe this division of responsibilities is the most effective approach for addressing the risks we face and that the leadership structure of our board of directors, which also emphasizes the independence of the board of directors in its oversight of its business and affairs, supports this approach.

**Scientific Advisory Board**

Our management team is supported by a scientific advisory board composed of leading academic and industry scientists. This group generally meets quarterly with our management team either as a group or individually to provide advice and guidance on our development programs. Our scientific advisory board consists of:

| | |
|---|---|
| John Amatruda, M.D. | Dr. Amatruda has broad clinical development expertise in metabolic disease. Most recently, he was Senior Vice President and Franchise Head for Diabetes and Obesity at Merck & Co., Inc. |
| Michael Camilleri, M.D. | Dr. Camilleri is a Professor of Medicine and Physiology in the Mayo Clinic College of Medicine. He is a leading expert in gastroenterology, with a research focus on enteric neurosciences and the physiology, pathophysiology, and treatment of diseases that affect gastrointestinal motility, including gastroparesis, diabetes, obesity, and irritable bowel syndrome. |
| William Chin, M.D. | Dr. Chin is Chief Medical Officer and Executive Vice President at PhRMA. Formerly, he was Executive Dean for Research at Harvard Medical School, following a 10-year career at Eli Lilly and Company, where he was most recently Senior Vice President for Discovery Research and Clinical Investigation. |
| Lee Kaplan, M.D., Ph.D.<br>*Chairman* | Dr. Kaplan is Director of the Obesity, Metabolism, & Nutrition Institute and was Founding Director of the Weight Center at the Massachusetts General Hospital. He is an Associate Professor of Medicine at Harvard Medical School. |
| Elizabeth Stoner, M.D. | Dr. Stoner is a founder of the LLC entity and served as our Chief Development Officer from 2010 through 2014. Dr. Stoner has served in various roles at Merck, most recently as Senior Vice President of Global Clinical Development Operations. |

**Code of Business Conduct and Ethics**

We have adopted a code of business conduct and ethics that will apply to all of our employees, including our executive officers, and directors, and those employees responsible for financial reporting. The code of business conduct and ethics will be available on our website. We expect that, to the extent required by law, any amendments to the code, or any waivers of its requirements, will be disclosed on our website.

## EXECUTIVE AND DIRECTOR COMPENSATION

This section discusses the material elements of compensation for our named executive officers and the most important factors relevant to an analysis of these policies. It provides qualitative information regarding the manner and context in which compensation is awarded to and earned by our executive officers named in the "Summary Compensation Table" below, or our named executive officers, and is intended to place in perspective the data presented in the following tables and the corresponding narrative. Our named executive officers are Keith M. Gottesdiener, M.D., Bart Henderson and Fred T. Fiedorek, M.D. Each of our named executive officers has a letter agreement between them and the Relamorelin Company, is currently an employee of the Relamorelin Company and provides services to us pursuant to a Payroll Services Agreement with the Relamorelin Company. Each of our named executive officers will become our full-time employee and will enter into a letter agreement with us prior to consummation of this offering. The compensation discussed below was paid to our executive officers by the Relamorelin Company and the compensation decisions discussed below were made by the compensation committee of the LLC entity's board of managers, which we refer to as the committee.

In preparing to become a public company, we have begun a thorough review of all elements of the compensation of our executives, including our compensation philosophy and the function and design of our equity incentive programs. We have begun and expect to continue to evaluate the existing executive compensation program to ensure our program is competitive with the companies with which we compete for executive talent and is appropriate for a public company.

### Summary Compensation Table

The following table presents compensation awarded in 2015 and 2014, to our named executive officers or accrued for those executive officers for services rendered during 2015 and 2014.

| Name & Principal Position | Year | Salary ($) | Stock Awards ($)(1) | Option Awards ($)(2) | Non-Equity Incentive Plan Compensation ($)(3) | Total ($)(4) |
|---|---|---|---|---|---|---|
| Keith M. Gottesdiener, M.D. | 2015 | $ 463,508 | — | $ 1,282,757 | $ 231,754 | $ 1,978,019 |
| *Chief Executive Officer* | 2014 | $ 450,882 | — | — | $ 225,442 | $ 676,324 |
| Bart Henderson | 2015 | $ 329,772 | — | $ 579,871 | $ 131,909 | $ 1,041,552 |
| *President* | 2014 | $ 320,789 | — | — | $ 128,316 | $ 449,105 |
| Fred T. Fiedorek, M.D. | 2015 | $ 335,000 | $ 567,934 | $ 349,164 | $ 117,250 | $ 1,369,348 |
| *Chief Medical Officer* | | | | | | |

(1) Reflects the full grant date fair value of restricted common units of the LLC entity granted by the LLC entity in 2015.

(2) The amounts reflect the full grant date fair value for awards granted during 2015. The grant date fair value was computed in accordance with ASC Topic 718, Compensation—Stock Compensation. The assumptions we used in valuing options are described in Note 7 to our audited financial statements contained herein.

(3) Amounts represent incentive payments earned in 2015 and paid during 2016, or earned in 2014 and paid during 2015, as applicable, based on achievement of performance goals and other factors.

(4) Reflects compensation for services by the named executive officers. Pursuant to the Payroll Services Agreement, these costs are shared with the Relamorelin Company on a proportional use basis. Costs have been allocated consistent with Staff Accounting Bulletin Topic 1B.

**Executive Compensation**

***Overview***

Our executive compensation program is based on a pay-for-performance philosophy. The committee designed our executive compensation program to achieve the following primary objectives: provide compensation and benefit levels that will attract, retain, motivate and reward a highly talented executive team within the context of responsible cost management; establish a direct link between our individual/team performance and results and our executives' compensation; and align the interests and objectives of our executives with those of our stockholders by linking executive equity awards to stockholder value creation. The compensation program for our executive officers is composed primarily of the following three main components: base salary, annual cash incentives and long-term equity incentives.

***Base Salary***

Base salaries were determined for each named executive officer by the committee, which gives consideration to each officer's experience, expertise and performance, as well as market compensation levels for similar positions.

| Name | 2015 Base Salary ($) |
|---|---|
| Keith M. Gottesdiener, M.D. | 463,508 |
| Bart Henderson | 329,772 |
| Fred T. Fiedorek, M.D. | 335,000 |

The 2015 base salary for each named executive officer became effective on January 1, 2015.

***Annual Performance-Based Incentive Opportunity***

In addition to base salaries, our named executive officers are eligible to receive annual performance-based cash incentives, which are designed to motivate our executives to achieve defined annual corporate goals and to reward our executives for their contributions towards achievement of these goals. The annual performance-based incentive each named executive officer was eligible to receive in 2015 was generally based on the extent to which the officer achieved the corporate goals that the committee established at the beginning of 2015. After the end of 2015, the committee reviewed performance against each goal and determined the extent to which each goal was achieved.

The committee generally considered each named executive officer's individual contributions towards reaching the annual corporate goals but did not establish specific individual goals for each of them. Pursuant to the terms of their respective agreements governing their employment relationship, described below under "Agreements with our Named Executive Officers," Dr. Gottesdiener is eligible to receive a target bonus of up to 50% of his base salary, Mr. Henderson is eligible to receive a target bonus of up to 50% of his base salary, and Dr. Fiedorek is eligible to receive a target bonus of up to 35% of his base salary. However, there is no minimum bonus percentage or amount established for the named executive officers and, as a result, the bonus amounts have varied from year to year based on corporate and individual performance.

In December 2015, the committee reviewed the 2015 corporate goals and determined that on an overall basis, significant progress had been made towards achieving all of those goals. In recognition of this achievement and the efforts of each executive, the committee awarded each of our named executive officers eligible for performance bonuses a portion of their target bonus opportunity for 2014. For 2014, Dr. Gottesdiener received 100% of his target bonus percentage, for a net bonus of 50% of his base salary, Mr. Henderson received 80% of his target bonus percentage, for a net bonus of 40% of his base salary, and Dr. Fiedorek received 100% of his target bonus percentage, for a net bonus of 35% of his base salary.

**Outstanding Equity Awards at End of 2015**

The following table provides information about outstanding equity awards held by each of our named executive officers at December 31, 2015. All options were granted under the Plan.

| | Option Awards[1][2] | | | | Stock Awards | |
|---|---|---|---|---|---|---|
| Name | Number of Securities Underlying Unexercised Options (#) Exercisable | Number of Securities Underlying Unexercised Options (#) Unexercisable | Option Exercise Price ($) | Option Expiration Date | Number of Shares or Units of Stock That Have Not Vested | Market Value of Shares or Units or Other Rights That Have Not Vested |
| Keith M. Gottesdiener, M.D. | 247,056(3) | 2,124,682 | $ 0.50 | 11/16/2025 | — | — |
| | 54,688(3) | 470,313 | $ 0.82 | 12/30/2025 | — | — |
| Bart Henderson | 113,777(3) | 978,483 | $ 0.50 | 11/16/2025 | — | — |
| | 23,438(3) | 201,563 | $ 0.82 | 12/30/2025 | — | — |
| Fred T. Fiedorek, M.D. | 76,241(3) | 655,671 | $ 0.50 | 11/16/2025 | — | — |
| | 9,375(4) | 80,625 | $ 0.82 | 12/30/2025 | — | — |
| | — | — | — | — | 79,503(5) | $ 1,141,663 |

(1) These options vest in 48 equal monthly installments, starting on August 3, 2015, except that the last installment, if necessary, may be smaller.

(2) Upon an option holder's termination of employment on account of the option holder's death or disability, these options expire on the first anniversary of the option holder's termination. If an option holder's employment terminates for any other reason, these options expire three months after the option holder's termination.

(3) If the option holder's employment is terminated within the three months preceding or the 12 months immediately following a change of control of us, 100% of the option holder's equity awards will become immediately exercisable.

(4) If the option holder's employment is terminated within the three months preceding or the 12 months immediately following a sale of the company (as defined in his letter agreement with the Relamorelin Company) of us, the vesting of all of the option holder's equity awards, including these options, will be accelerated such that up to 50% of the option holder's equity awards will become immediately exercisable. If, at the time of the change of control, 50% of the option holder's equity awards are already vested, there will be no further acceleration of vesting.

(5) Represents the unvested portion of restricted common units of the LLC entity granted by the LLC entity on June 1, 2015. The restricted common units vest in 48 equal monthly installments beginning October 21, 2014.

***Pension Benefits***

Our named executive officers did not participate in, or otherwise receive any benefits under, any pension or retirement plan during 2015, other than pursuant to the 401(k) plan described under "401(k) Plan."

***Nonqualified Deferred Compensation***

Our named executive officers did not participate in, or earn any benefits under, a nonqualified deferred compensation plan during 2015.

**Agreements with our Named Executive Officers**

Each of our named executive officers is subject to a letter agreement with the Relamorelin Company and we have a Payroll Services Agreement with the Relamorelin Company pursuant to which they provide services to us. Prior to consummation of this offering, each named executive officer will enter into a new letter agreement with us which we anticipate will be on similar terms as the letter agreements described below.

*Agreement with Dr. Gottesdiener.* Under Dr. Gottesdiener's letter agreement, he is entitled to an annual base salary of $450,882, subject to adjustment in the committee's sole discretion, is eligible to receive an annual target performance bonus of up to 50% of his base salary, as determined by the committee, and is entitled to certain severance benefits, the terms of which are described below under "—Potential Payments Upon Termination or Change of Control."

*Agreement with Mr. Henderson.* Under Mr. Henderson's letter agreement, he is entitled to an annual base salary of $320,789, subject to adjustment in the committee's sole discretion, is eligible to receive an annual target performance bonus of up to 50% of his base salary, as determined by the committee, and is entitled to certain severance benefits, the terms of which are described below under "—Potential Payments Upon Termination or Change of Control."

*Agreement with Dr. Fiedorek.* Under Dr. Fiedorek's letter agreement, he is entitled to an annual base salary of $335,000, subject to adjustment in the committee's sole discretion, is eligible to receive an annual target performance bonus of up to 35% of his base salary, as determined by the committee, and is entitled to certain severance benefits, the terms of which are described below under "—Potential Payments Upon Termination or Change of Control."

**Potential Payments Upon Termination or Change of Control**

Regardless of the manner in which a named executive officer's employment terminates, each named executive officer is entitled to receive amounts earned during his term of employment, including salary and unused vacation pay. In addition, each of our named executive officers is eligible to receive certain benefits pursuant to his letter agreement as described below.

*Dr. Gottesdiener.* Under the terms of Dr. Gottesdiener's letter agreement, upon termination without "cause," as defined below, or for "good reason," as defined below, subject to customary conditions, including his execution and nonrevocation of an acceptable release, Dr. Gottesdiener will be entitled to receive a severance payment in an aggregate amount equal to 12 months of his base salary then in effect, paid in substantially equal installments over a period of 12 months in accordance with ordinary payroll practices.

Upon a termination without "cause" or for "good reason" within the three months immediately preceding or the 12 months immediately following a "sale of the company" as defined in the letter agreement, subject to customary conditions, including his execution and nonrevocation of an acceptable release, Dr. Gottesdiener, in lieu of the above benefits, will be entitled to receive a severance payment in an aggregate amount equal to 12 months of his base salary then in effect, paid in substantially equal installments over a period of 12 months in accordance with ordinary payroll practices, and a payment equal to 100% of his annual target bonus for the year in which the termination occurs. In addition, each unvested equity award held by Dr. Gottesdiener will immediately become fully vested.

Upon termination, Dr. Gottesdiener is entitled to reimbursement of his medical benefit premiums for so long as he is entitled to severance under his letter agreement. In addition, upon termination, Dr. Gottesdiener may exercise each option then outstanding and exercisable, but only until the earlier to occur of (i) the expiration of the term of such option, or (ii) the expiration of the limited period of time set forth in the applicable plan and/or stock option agreement following the termination date.

*Mr. Henderson*. Under the terms of Mr. Henderson's letter agreement, upon termination without "cause," as defined below, or for "good reason," as defined below, subject to customary conditions, including his execution and nonrevocation of an acceptable release, Mr. Henderson will be entitled to receive a severance payment in an aggregate amount equal to six months of his base salary then in effect, paid in substantially equal installments over a period of six months in accordance with ordinary payroll practices.

Upon a termination without "cause" or for "good reason" within the three months immediately preceding or the 12 months immediately following a "sale of the company" as defined in his letter agreement, subject to customary conditions, including his execution and nonrevocation of an acceptable release. Mr. Henderson, in lieu of the above benefits, will be entitled to receive a severance payment in an aggregate amount equal to 12 months of his base salary then in effect, paid in substantially equal installments, over a period of 12 months in accordance with ordinary payroll practices, and a payment equal to 100% of his annual target bonus for the year in which the termination occurs. In addition, each unvested equity award held by Mr. Henderson will immediately become fully vested.

Upon termination, Mr. Henderson is entitled to reimbursement of his medical benefit premiums for so long as he is entitled to severance under his letter agreement. In addition, upon termination, Mr. Henderson may exercise each option then outstanding and exercisable, but only until the earlier to occur of (i) the expiration of the term of such option, or (ii) the expiration of the limited period of time set forth in the applicable plan and/or stock option agreement following the termination date.

*Dr. Fiedorek*. Under the terms of Dr. Fiedorek's letter agreement, upon termination without "cause," as defined below, or for "good reason," as defined below, subject to customary conditions, including his execution and nonrevocation of an acceptable release, Dr. Fiedorek will be entitled to receive a severance payment in an aggregate amount equal to six months of his base salary then in effect, paid in substantially equal installments over a period of six months in accordance with ordinary payroll practices.

Upon a termination without "cause" or for "good reason" within the three months immediately preceding or the 12 months immediately following a "sale of the company" as defined in his letter agreement, subject to customary conditions, including his execution and nonrevocation of an acceptable release. Dr. Fiedorek, in lieu of the above benefits, will be entitled to receive a severance payment in an aggregate amount equal to 12 months of his base salary then in effect, paid in substantially equal installments, over a period of 12 months in accordance with ordinary payroll practices, and a payment equal to 100% of his annual target bonus for the year in which the termination occurs. In addition, up to 50% of the unvested equity awards held by Dr. Fiedorek will immediately become fully vested. However, if 50% of Dr. Fiedorek's equity awards have already vested, there will be no further acceleration of vesting.

Upon termination, Dr. Fiedorek is entitled to reimbursement of his medical benefit premiums for so long as he is entitled to severance under his letter agreement. In addition, upon termination, Dr. Fiedorek may exercise each option then outstanding and exercisable, but only until the earlier to occur of (i) the expiration of the term of such option, or (ii) the expiration of the limited period of time set forth in the applicable plan and/or stock option agreement following the termination date.

For purposes of these letter agreements and those we intend to enter into with our named executive officers, "cause" generally means the occurrence of any of the following events by the individual: (i) commission of any crime involving fraud, breach of trust, or physical or emotional harm to any person, moral turpitude or dishonesty; (ii) any unauthorized use or disclosure of proprietary information (other than any such use or disclosure that is not intentional and is not material); (iii) any intentional misconduct or gross negligence that has a material adverse effect on business or reputation; (iv) any material breach by the executive of any agreement that is not cured within 30 days after receipt of notice; or (v) repeated and willful failure to perform the duties, functions and responsibilities of his position.

For purposes of the letter agreements, "good reason" generally means resignation by the executive from all positions if, without the executive's written consent, there is a (i) material diminution of duties or authority; (ii) material reduction of the executive's base salary not pursuant to a program affecting all or substantially all employees unless the executive is affected to a greater extent than other similarly situated employees pursuant to such a program; or (iii) requirement to relocate the primary work location to a location that would increase the one way commute distance by more than 35 miles from the executive's primary work location as of immediately prior to such change, in each case, provided that the executive provides written notice within 30 days following such event, and failure to remedy the event within 30 days following receipt of such notice and the executive's resignation is effective no more than 30 days following the expiration of a cure period. Good reason may also occur if the executive resigns from all positions on the one year anniversary of a change in control if the executive has not entered into a written letter or agreement with the Company or its successor.

**Employee Benefit and Stock Plans**

***Amended and Restated 2015 Equity Incentive Plan***

We currently have a 2015 equity incentive plan, or, the Plan, which we expect our board of directors and our stockholders to amend and restate effective immediately prior to the completion of this offering. The following summary of the material terms of the Plan does not purport to be complete and is qualified by reference to the full text of the Plan, which we will file as an exhibit to our registration statement of which this prospectus is a part.

The Plan provides for the grant of incentive stock options and nonstatutory stock options, stock appreciation rights, restricted stock and restricted stock unit awards, performance units, stock grants and qualified performance-based awards (that is, any of the foregoing that are intended to constitute performance-based compensation under Section 162(m) of the Code), which we collectively refer to as "awards" in connection with the Plan. Our directors, officers and other employees, as well as others performing consulting or advisory services for us, are eligible for grants under the Plan. The purpose of the Plan is to provide incentives that will attract, retain and motivate highly competent officers, directors, employees and consultants and advisors to promote the success of our business and align employees' interests with stockholders' interests.

***Administration***

Under its terms, the Plan is administered by the compensation committee of our board of directors which is made up of independent outside non-employee directors for purposes of applicable securities and tax laws. The board of directors itself may also exercise any of the powers and responsibilities under the Plan. The compensation committee may delegate to an executive officer or officers the authority to grant awards under the Plan subject to applicable law and to guidelines specified by the compensation committee. Subject to the terms of the Plan, the compensation committee will select the recipients of awards and determine, among other things, the:

- number of shares of common stock covered by awards and the dates upon which such awards become exercisable or any restrictions to which they are subject lapse, as applicable;
- type of award and the exercise or purchase price and method of payment for each such award;
- vesting period for awards, risks of forfeiture and any potential acceleration of vesting or lapses in risks of forfeiture; and
- duration of awards.

All decisions, determinations and interpretations made in good faith by the compensation committee with respect to the Plan and the terms and conditions of or operation of any award are final and binding on

all participants, beneficiaries, heirs, assigns or other persons holding or claiming rights under the Plan or any award.

***Available Shares***

Subject to the following sentence, the aggregate number of shares of our common stock which may be issued under the Plan or with respect to which awards may be granted may not exceed 16,500,000 shares (including pursuant to incentive stock options), which may be either authorized and unissued shares of our common stock or shares of common stock held in or acquired for our treasury. The number of shares authorized under the Plan will be increased each January 1, commencing on the first January 1 following consummation of our initial public offering, by an amount equal to % of outstanding shares of stock as of the end of the immediately preceding fiscal year. Notwithstanding the foregoing, our board of directors may act prior to January 1 of a given year to provide that there will be no such January 1 increase in the number of shares of stock authorized under the Plan for such year or that the increase in the number of shares of stock authorized under the Plan for such year will be a lesser number than would otherwise occur pursuant to the preceding sentence. Notwithstanding the preceding sentences, in no event shall the number of shares available for issuance pursuant to incentive options over the term of the Plan exceed shares of stock. In general, if awards under the Plan are for any reason cancelled, or expire or terminate unexercised, the number of shares covered by such awards will again be available for the grant of awards under the Plan.

***Eligibility for Participation***

Members of our board of directors, as well as employees of, and consultants and advisors to, us or any of our subsidiaries and affiliates are eligible to receive awards under the Plan. The selection of participants is within the sole discretion of the compensation committee.

***Individual Limitations***

The maximum number of shares of common stock that may be subject to options or stock appreciation rights or any combination thereof granted to any one person during any single calendar year shall be . The maximum number of shares of common stock that may be subject to all other awards granted to any one person during any single calendar year that are intended to be qualified performance-based awards shall be . The maximum value of awards denominated in cash granted to any one person other than a non-employee member of our board of directors during any single calendar year and that are intended to be qualified performance-based awards shall be $ . The maximum value of awards denominated in cash granted to any non-employee member of our board of directors during any single calendar year shall be $ . Each of the foregoing limitations shall be doubled with respect to awards granted to an individual during the first calendar year in which he or she commences employment.

***Incentive Stock Options***

Incentive stock options are options that are intended to qualify as incentive stock options under Section 422 of the Code, and will be granted pursuant to incentive stock option agreements. Only our employees or employees of our parent or subsidiary corporations, as contemplated by the Code, are eligible to receive incentive stock options. The compensation committee will determine the exercise price for an incentive stock option, which may not be less than 100% of the fair market value of the stock underlying the option on the date of grant. In addition, incentive options granted to employees who own, or are deemed to own, more than 10% of our voting stock, must have an exercise price not less than 110% of the fair market value of the stock underlying the option on the date of grant. No incentive stock option may be exercised on or after the tenth anniversary of the date of grant, or after the fifth anniversary of the date of grant for employees who own, or are deemed to own, more than 10% of our voting stock.

***Nonstatutory Stock Options***

Nonstatutory stock options are not intended to qualify as incentive stock options under Section 422 of the Code and will be granted pursuant to nonstatutory stock option agreements. The compensation committee will determine the exercise price and term of a nonstatutory stock option.

***Stock Appreciation Rights***

A stock appreciation right, or a SAR, entitles a participant to receive a payment equal in value to the difference between the fair market value of a share of stock on the date of exercise of the SAR over a specified exercise price of the SAR. SARs may be granted in tandem with a stock option, such that the recipient has the opportunity to exercise either the stock option or the SAR, but not both. The exercise price (above which any appreciation is measured) will not be less than 100% of the fair market value of the common stock on the date of grant of the SAR or, in the case of an SAR granted in tandem with a stock option, the exercise price will be the same as the exercise price of the related stock option. The compensation committee may settle a SAR amount in cash, in shares of our common stock, or a combination of cash and shares of our common stock as determined by the compensation committee at or after grant but subject to the terms of the applicable aware agreement. The terms, methods of exercise, and any other terms and conditions of any SAR will be determined by the compensation committee at the time of the grant of the award and will be reflected in the award agreement.

***Restricted Stock and Restricted Stock Units***

A restricted stock award or restricted stock unit award is the grant of shares of our common stock either currently (in the case of restricted stock) or at a future date (in the case of restricted stock units) at a price determined by the compensation committee (including zero), based on satisfaction of certain vesting conditions, including continuing employment or other service, or achievement of performance goals. During the vesting period, participants holding shares of restricted stock shall, except as otherwise provided in the Plan or an individual award agreement, have full voting and dividend rights with respect to such shares but any stock dividends or other distributions payable in shares of stock or other securities of ours will be subject to the same vesting conditions that apply to the shares of restricted stock in respect of which the dividend was made. The receipt of cash dividends may also be deferred or required to be invested in additional shares of restricted stock. Participants holding restricted stock units may be entitled to receive payments equivalent to any dividends declared with respect to the common stock referenced in the grant of the restricted stock units, but only following the close of the applicable restriction period and then only if the employment or other service and/or performance goals have been met. The restrictions will lapse in accordance with a schedule or other conditions determined by the compensation committee. The compensation committee may settle restricted stock units in cash, in shares of our common stock, or a combination of cash and shares of our common stock as determined by the compensation committee at or after grant but subject to the terms of the applicable award agreement.

***Performance Units***

A performance unit award is a contingent right to receive the value of a specified number of shares of our common stock over an initial value for such number of shares (which may be zero) established by the compensation committee at the time of grant if certain performance goals or other business objectives are met with the specified performance period. The value of performance units will depend on the degree to which the specified performance goals are achieved. The compensation committee may, in its discretion, pay earned performance units in cash, in shares of our common stock, or a combination of both cash and shares of our common stock as determined by the compensation committee at or after grant but subject to the terms of the applicable award agreement.

The compensation committee has discretion to select the length of any applicable restriction or performance period, the kind and/or level of the applicable performance goal and whether the performance goal is to apply to us, to one of our subsidiaries or any division or business unit or to the recipient.

***Stock Grants***

A stock grant is an award of shares of common stock without restriction. Stock grants may only be made in limited circumstances, such as in lieu of other earned compensation or as an inducement to employment. Stock grants are made without any forfeiture conditions.

***Qualified Performance-Based Awards***

Qualified performance-based awards are earned based on the achievement of certain performance criteria intended to satisfy Section 162(m) of the Code. Section 162(m) of the Code limits our federal income tax deduction for compensation to certain of our executive officers to $1.0 million dollars, but excludes from that limit "performance-based compensation." Any form of award permitted under the Plan other than a stock grant may be granted as a qualified performance-based award, but, in the case of awards other than stock options and SARs, will be subject to satisfaction of pre-established, objective performance goals. Qualified performance-based awards include any of the foregoing awards that are granted subject to vesting and/or payment based on the attainment of specified performance goals. Performance criteria upon which performance goals are established by the plan administrator may include but are not limited to: (i) net earnings (either before or after one or more of (A) interest, (B) taxes, (C) depreciation and (D) amortization); (ii) gross or net sales or revenue; (iii) net income (either before or after taxes); (iv) adjusted net income; (v) operating earnings or profit; (vi) cash flow (including, but not limited to, operating cash flow and free cash flow); (vii) return on assets; (viii) return on capital; (ix) return on stockholders' equity; (x) total stockholder return; (xi) return on sales; (xii) gross or net profit or operating margin; (xiii) costs; (xiv) expenses; (xv) working capital; (xvi) earnings per share; (xvii) adjusted earnings per share; (xviii) price per share; (xix) regulatory body approval for commercialization of a product; (xx) implementation, completion or attainment of objectives relating to research, development, regulatory, commercial or strategic milestones or developments; (xxi) market share; (xxii) economic value; (xxiii) revenue; (xxiv) revenue growth; and (xxv) operational and organizational metrics.

***Transferability***

Awards, other than stock grants, granted under the Plan are generally nontransferable (other than by will or the laws of descent and distribution), except that the compensation committee may, at the time of grant or thereafter, provide for the transferability of nonstatutory stock options or restricted stock to certain family members and/or certain trusts, foundations or other entities owned or controlled by such family members.

***Adjustment for Corporate Actions***

In the event of any change in the outstanding shares of common stock as a result of a reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split or other similar distribution with respect to the shares of common stock, an appropriate and proportionate adjustment will be made in (i) the maximum numbers and kinds of shares subject to the Plan, (ii) the numbers and kinds of shares or other securities subject to then outstanding awards, (iii) the exercise price for each share or unit of any other securities subject to then outstanding stock options or SARs (without change in the aggregate purchase price as to which such stock options or SARs remain exercisable), and (iv) the repurchase price of each share of restricted stock then subject to a risk of forfeiture in the form of a company repurchase right. Any such adjustment in awards will be determined and made by the compensation committee in its sole discretion.

***Transactions***

In the event of a transaction, including (i) any merger or consolidation of our company with or into another entity as a result of which our stock is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (ii) any sale or exchange of all or substantially all of our common stock for cash, securities, or other property, (iii) any sale, transfer or other disposition of all or substantially all of our assets to one or more other persons in a single transaction or series of related transactions, or (iv) any liquidation or dissolution of our company, the compensation committee may, (1) provide that awards will be assumed, or substantially equivalent rights shall be provided in substitution therefor by the acquiring or succeeding entity (or an affiliate thereof), (2) upon written notice to the recipient, provide that the recipient's unexercised outstanding stock options and SARs will terminate immediately prior to the consummation of such transaction unless exercised within a specified period following the date of such written notice, (3) provide that all or any unvested restricted stock or restricted stock unit awards will terminate immediately prior to the consummation of such transaction, (4) provide that all or any outstanding stock options and SARs shall become exercisable in whole or in part prior to or upon the transaction, (5) provide that the vesting of all or any unrestricted stock or restricted stock unit awards shall accelerate and any restrictions applicable to such awards shall lapse prior to or upon such transaction, (6) provide for cash payments, net of applicable tax withholdings, to be made to the recipients, (7) provide that, in connection with our liquidation or dissolution, awards other than awards of restricted stock or stock grants shall convert into the right to receive liquidation proceeds net of the exercise price of the awards and any applicable tax withholdings, or (8) any combination of the foregoing. With respect to outstanding awards other than stock options or SARs, that are not terminated prior to or upon the transaction, upon the occurrence of a transaction other than our liquidation or dissolution which is not part of another form of transaction, our repurchase and other rights under each such award will transfer to our successor and inure to the benefit of our successor, and shall, unless the compensation committee determines otherwise, apply to the cash, securities or other property which the stock was converted into or exchanged for pursuant to such transaction in the same manner and to the same extent as they applied to the award. In taking any of the actions described in the event of a transaction, the compensation committee is not obligated to treat all awards, all awards held by a participant or all awards of the same type identically.

***Change of Control***

Except as otherwise provided in the Plan or in the applicable award agreement, in the event of a change of control, to the extent that the surviving entity declines to continue, convert, assume or replace outstanding awards, then all such awards shall become fully vested and exercisable and any restrictions applicable to any such awards shall lapse in connection with the transaction.

A change of control is defined as the occurrence of any of the following: (1) a transaction, as described above, unless securities possessing more than 50% of the total combined voting power of the resulting entity or acquiror's outstanding securities (or the securities of any parent thereof) are held by a person or persons who held securities possessing more than 50% of the total combined voting power of our outstanding securities immediately prior to the transaction; (2) any person or group of persons, excluding our company and certain other related entities or any of its affiliates, directly or indirectly acquires, including but not limited to by means of a merger or consolidation, beneficial ownership of securities possessing more than 50% of the total combined voting power of our outstanding securities, unless pursuant to a tender or exchange offer made directly to our stockholders that our board of directors recommends such stockholders accept; or (3) over a period of no more than 36 consecutive months there is a change in the composition of our board such that a majority of the board members ceases to be composed of individuals who either (i) have been board members continuously since the beginning of that period, or (ii) have been elected or nominated for election as board members during such period by at least a majority of the remaining board members who have been board members continuously since the

beginning of that period; or (4) a majority of the board of directors votes in favor of a decision that a change of control has occurred.

***Amendment and Termination***

Our board of directors may at any time amend any or all of the provisions of the Plan, or suspend or terminate it entirely, retroactively or otherwise. However, except as set forth in the Plan, we must obtain stockholder approval to increase the number of shares available under the Plan, or to change the description of persons eligible for awards, or as otherwise required by law or applicable stock exchange rules. Unless otherwise required by law or specifically provided in the Plan, the rights of a participant under awards granted prior to any amendment, suspension or termination may not be adversely affected without the consent of the participant. Unless the Plan is earlier terminated by our board of directors, the Plan terminates immediately prior to the tenth anniversary of the earlier of the adoption of the Plan by our board of directors and approval of the Plan by our stockholders.

***Allocation of Awards; Plan Benefits.***

It is not presently possible to determine the dollar value of award payments that may be made or the number of options, shares of restricted stock, restricted stock units, or other awards that may be granted under the Plan in the future, or the individuals who may be selected to receive such awards because awards under the Plan are granted at the discretion of the compensation committee.

***2016 Employee Stock Purchase Plan***

We expect our board of directors to adopt and our stockholders to approve the 2016 employee stock purchase plan, or the ESPP, which will become effective immediately prior to the completion of this offering. The following summary of the material terms of the ESPP does not purport to be complete and is qualified by reference to the full text of the ESPP, which we will file as an exhibit to our registration statement of which this prospectus is a part.

The ESPP provides an incentive to, and encourages stock ownership by, all of our eligible employees and those of our participating subsidiaries so that they may share in our growth by acquiring or increasing their share ownership in us. It is intended that the ESPP constitute an "employee stock purchase plan" within the meaning of Section 423 of the Code. Under the ESPP, eligible employees may purchase shares of our common stock at a discount through payroll deductions.

***Administration***

The ESPP is administered by the compensation committee of our board of directors. The board of directors itself may exercise any of the powers and responsibilities under the ESPP. The compensation committee may delegate its duties in order to facilitate the purchase and transfer of shares of our common stock and for the day-to-day administration of the ESPP. The compensation committee, has the discretion, subject to the provisions of the ESPP, to make or to select the manner of making all determinations with respect to options granted under the ESPP. Further, the compensation committee has complete authority to interpret the ESPP, to prescribe, amend and rescind rules and regulations relating to it, and to make all other determinations necessary or advisable for the administration of the ESPP. All decisions, determinations and interpretations made in good faith by the compensation committee with respect to the ESPP are final and binding on all persons having or claiming any interest in the ESPP or any option granted under the ESPP.

***Shares Subject to the Plan***

The shares issued or to be issued under the ESPP are authorized but unissued shares of our common stock or are shares held by us in our treasury. Subject to the following sentence, the ESPP authorizes the

issuance of up to shares of common stock. The number of shares authorized under the ESPP will be increased each January 1, commencing on the first January 1 following consummation of our initial public offering and ending on (and including) January 1, 2026, by an amount equal to the lesser of (i) % of outstanding shares as of the end of the immediately preceding fiscal year and (ii) . Notwithstanding the foregoing, our board of directors may act prior to January 1 of a given year to provide that there will be no such January 1 increase in the number of shares authorized under the ESPP for such year, or that the increase in the number of shares authorized under the ESPP for such year will be a lesser number than would otherwise occur pursuant to the preceding sentence.

***Terms of Participation***

The ESPP will be implemented through a series of purchase periods called "plan periods." The initial plan period shall commence on May 1 or November 1 of the calendar year as the Committee may determine, and will continue for six months. After the initial plan period, there will be two consecutive six-month plan periods, during each twelve month period thereafter, beginning on May 1 and ending on the immediately following October 31, and beginning on November 1 and ending on the immediately following April 30. An eligible employee will be granted an option at the beginning of the plan period, and can accumulate money to pay the exercise price for the option by electing to have payroll deductions taken from each payroll during a plan period of an amount, in whole percentages, between 1% and 15% of his or her compensation, but will not exceed $25,000 on an annual basis. At the end of each plan period, unless the participating employee has withdrawn from the ESPP, the option will be exercised by applying the employee's accumulated payroll deductions to the purchase of shares of our common stock. The exercise price paid by the employee will be the lower of % of the fair market value of our common stock at (i) the commencement of the plan period and (ii) the end of the plan period.

***Withdrawal***

An employee may withdraw from participation in an offering up to two weeks prior to the plan period termination date and permanently draw out the balance accumulated in his or her account. In such case, the employee's option for the plan period he or she is withdrawing from will be automatically terminated. A participant's withdrawal from a plan period will not have any effect upon his or her eligibility to participate in a succeeding plan period or in any similar plan which we may adopt. If a participant's employment ends prior to a plan period termination date for any reason, including retirement or death, the contributions credited to his or her account will be returned to him or her or, in the case of his or her death, to his or her designated beneficiaries, and his or her option will be automatically terminated.

***Eligibility***

Our employees and those of a participating subsidiary are eligible to participate in the ESPP if we customarily employ them for at least 20 hours per week and more than five months per year. However, no employee shall be granted an option under the ESPP if, immediately after the grant, the employee would own stock, including any outstanding options to purchase stock, equaling 5% or more of the total voting power or value of all classes of our stock. In addition, the ESPP provides that no employee may be granted an option if the option would permit the employee to purchase stock under all of our employee stock purchase plans in an amount that exceeds $25,000 of the fair market value of such stock, determined as of the date(s) of grant, for each calendar year in which the option is outstanding.

***Adjustment for Corporate Actions***

In the event of any change in the outstanding shares of common stock as a result of a reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split, or other similar distribution with respect to the shares of common stock, an appropriate and proportionate adjustment will be made in (i) the maximum numbers and kinds of shares subject to the ESPP, (ii) the numbers and kinds of shares or

other securities subject to the then outstanding options, and (iii) the exercise price for each share or other unit of any other securities subject to then outstanding options.

***Corporate Transactions***

In the event of our dissolution or liquidation, the plan period then in progress will terminate unless otherwise provided by the compensation committee. In the event of another significant corporate transaction such as a merger or consolidation of us with and into another person or entity or the sale or transfer of all or substantially all of our assets, each right to purchase stock under the ESPP may be assumed, or an equivalent right substituted by, the successor corporation or a parent or subsidiary of the successor corporation. In the event that the successor corporation refuses to assume each purchase right or to substitute an equivalent right, any ongoing offering period will be shortened so that employees' rights to purchase stock under the ESPP are exercised prior to the transaction, unless the employee has withdrawn.

***Amendment and Termination***

Our board of directors has the power to amend or terminate the ESPP and to change or terminate plan periods as long as any such action does not adversely affect any outstanding rights to purchase stock; provided, however, that the board of directors may amend or terminate the ESPP or a plan period even if it would adversely affect outstanding options in order to avoid our incurring adverse accounting charges or if the board of directors determines that termination of the ESPP and/or plan period is in our best interest and the best interest of our stockholders. The ESPP will continue in effect until the tenth anniversary of the closing of the offering described in this prospectus, unless earlier terminated by the board of directors.

***Amount of Benefits***

The dollar value of benefits that will be received by any employee or group of employees in the ESPP is not determinable due to the voluntary nature of the ESPP and the variables involved in the calculation of any such benefits (including our stock price).

**401(k) Plan**

We maintain a tax-qualified retirement plan that provides eligible U.S. employees with an opportunity to save for retirement on a tax advantaged basis. Eligible employees are able to defer eligible compensation up to certain Code limits, which are updated annually. We have the ability to make matching and discretionary contributions to the 401(k) plan but have not done so to date. Employee contributions are allocated to each participant's individual account and are then invested in selected investment alternatives according to the participants' directions. Employees are immediately and fully vested in their own contributions. The 401(k) plan is intended to be qualified under Section 401(a) of the Code, with the related trust intended to be tax exempt under Section 501(a) of the Code. As a tax-qualified retirement plan, contributions to the 401(k) plan are deductible by us when made, and contributions and earnings on those amounts are not taxable to the employees until withdrawn or distributed from the 401(k) plan.

**Non-Employee Director Compensation**

No compensation was paid to or earned by our non-employee directors during our 2015 fiscal year. In , , our board of directors adopted a nonemployee director compensation policy that will be effective upon completion of this offering. We retained an independent compensation consultant to help us determine the terms of the non-employee director compensation policy. Our non-employee director compensation policy is designed to provide a total compensation package that enables us to attract and retain, on a long-term basis, skilled non-employee directors. Under the policy, all

non-employee directors will be paid an annual fee of $ and such additional fees as are set forth in the following table. All payments will be made quarterly in arrears.

| Non-Employee Director | Annual Fee |
|---|---|
| Chairman of the audit committee | $ |
| Member of the audit committee (other than chairman) | $ |
| Chairman of the compensation committee | $ |
| Member of the compensation committee (other than chairman) | $ |
| Chairman of the governance and nominating committee | $ |
| Member of the governance and nominating committee (other than chairman) | $ |

Under the non-employee director compensation policy, each individual who is initially appointed or elected to the board of directors will be eligible to receive an option to purchase up to shares of our common stock under the Plan on the date he or she first becomes a nonemployee director. These option grants will vest annually over a four-year period from the date of grant, subject to continued service as a non-employee director through that vesting date. In addition, on the date of the annual meeting of stockholders, each continuing non-employee director who has served on the board of directors for a minimum of six months will be eligible to receive an option grant to purchase up to shares of our common stock, which will vest in full upon the earlier of the first anniversary of the date of grant or the date of the next annual meeting of stockholders. The exercise price for each of these option grants will be equal to the fair market value of our common stock on the date of grant. These new director grants and annual grants will be subject to approval by our board of directors at the time of grant.

**Limitation on Liability and Indemnification Matters**

Section 145 of the Delaware General Corporation Law authorizes a corporation's board of directors to grant, and authorizes a court to award, indemnity to officers, directors and other corporate agents.

As permitted by Delaware law, our amended and restated certificate of incorporation provides that, to the fullest extent permitted by Delaware law, no director will be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director. Pursuant to Delaware law, such protection would be not available for liability:

- for any breach of a duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- for any transaction from which the director derived an improper benefit; or
- for an act or omission for which the liability of a director is expressly provided by an applicable statute, including unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law.

Our amended and restated certificate of incorporation also provides that if Delaware law is amended after the approval by our stockholders of the amended and restated certificate of incorporation to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of our directors will be eliminated or limited to the fullest extent permitted by Delaware law.

Our amended and restated bylaws further provide that we must indemnify our directors and officers to the fullest extent permitted by Delaware law. Our amended and restated bylaws also authorize us to indemnify any of our employees or agents and permit us to secure insurance on behalf of any officer, director, employee or agent for any liability arising out of his or her action in that capacity, whether or not Delaware law would otherwise permit indemnification.

In addition, our amended and restated bylaws provide that we are required to advance expenses to our directors and officers as incurred in connection with legal proceedings against them for which they may be indemnified and that the rights conferred in the amended and restated bylaws are not exclusive.

We intend to enter into indemnification agreements with each of our directors and executive officers. These agreements, among other things, would require us to indemnify each director and officer to the fullest extent permitted by Delaware law, the amended and restated certificate of incorporation and amended and restated bylaws, for expenses such as, among other things, attorneys' fees, judgments, fines and settlement amounts incurred by the director or executive officer in any action or proceeding, including any action by or in our right, arising out of the person's services as our director or executive officer or as the director or executive officer of any subsidiary of ours or any other company or enterprise to which the person provides services at our request. Upon consummation of the offering, we intend to obtain and maintain directors' and officers' liability insurance.

The SEC has taken the position that personal liability of directors for violation of the federal securities laws cannot be limited and that indemnification by us for any such violation is unenforceable. The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended 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.

**Rule 10b5-1 Sales Plans**

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, pursuant to which, if adopted, they would contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or officer when entering into the plan, without further direction from them. The director or officer may amend a Rule 10b5-1 plan in some circumstances and may terminate a plan at any time. Our directors and executive officers also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material nonpublic information subject to compliance with the terms of our insider trading policy. Prior to 180 days after the date of this offering (subject to early termination), the sale of any shares under such plan would be subject to the lock-up agreement that the director or officer has entered into with the underwriters.

## CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

We describe below transactions and series of similar transactions, during our last three fiscal years, to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed $120,000; and
- any of the directors, executive officers or holders of more than 5% of our voting equity, or any member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest.

Compensation arrangements for our directors and named executive officers are described elsewhere in this prospectus.

### Series A Preferred Stock Financing

In August 2015 and December 2015, pursuant to the series A preferred stock purchase agreement we issued an aggregate of 40,000,000 shares of series A preferred stock, par value $0.001 per share, at a purchase price of $1.00 per share, resulting in aggregate gross proceeds of $40.0 million to us.

Following the closing of this offering and upon the expiration of the lock-up period, holders of our series A preferred stock will be entitled to certain registration rights with respect to the resale of such shares under the Securities Act, pursuant to the investors' rights agreement entered into between us and certain of our stockholders. See "Description of Capital Stock—Registration Rights."

The following table summarizes the participation in the series A preferred stock financing by our directors, executive officers, holders of more than 5% of our voting securities, or any member of the immediate family of the foregoing persons. For further information on the ownership of securities of holders of more than 5% of our voting securities, see "Principal Stockholders."

| Name | Shares of Series A Preferred Stock | Date(s) Purchased |
|---|---|---|
| OrbiMed Private Investments V, LP | 10,937,500 | August 3, 2015 |
| 667 L.P. and Baker Brothers Life Sciences, L.P. | 5,000,000 | August 3, 2015 |
| OrbiMed Private Investments V, LP | 6,562,500 | December 1, 2015 |
| 667 L.P. and Baker Brothers Life Sciences, L.P. | 3,000,000 | December 1, 2015 |

### Indemnification Agreements

We currently have an indemnification agreement with Jonathan T. Silverstein. Upon the completion of this offering, we intend to enter into new indemnification agreements with each of our directors and executive officers. These agreements, among other things, will require us to indemnify each director and officer to the fullest extent permitted by Delaware law, our amended and restated certificate of incorporation and amended and restated bylaws, for expenses such as, among other things, attorneys' fees, judgments, fines, and settlement amounts incurred by the director or executive officer in any action or proceeding, including any action by or in our right, arising out of the person's services as our director or executive officer or as the director or executive officer of any subsidiary of ours or any other company or enterprise to which the person provides services at our request. Upon consummation of the offering, we intend to obtain and maintain directors' and officers' liability insurance. See "Executive and Director Compensation—Limitation on Liability and Indemnification Matters."

**Employment and Board Arrangements**

Our executive officers have employment letters with the Relamorelin Company, and we currently have a Payroll Services Agreement with the Relamorelin Company for their services. For information about the employment letters with our named executive officers, refer to "Executive and Director Compensation—Agreements with our Named Executive Officers." Our board members are also members of the boards of the LLC entity and/or the Relamorelin Company. See "Management."

**Related Party Transactions Policy**

Our board of directors has adopted a policy, effective upon the closing of this offering, that our executive officers, directors, nominees for election as a director, beneficial owners of more than 5% of any class of our common stock and any members of the immediate family of any of the foregoing persons are not permitted to enter into a related person transaction with us without the prior review and approval of our governance and nominating committee. 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 any class of our common stock or any member of the immediate family of any of the foregoing persons in which the amount involved exceeds $120,000 and such person would have a direct or indirect material interest must first be presented to our governance and nominating committee for review, consideration and approval. In approving or rejecting any such proposal, our governance and nominating committee is to consider the material facts of the transaction, 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. We did not have a formal review and approval policy for related party transactions at the time of any of the transactions described above. However, the transactions described above under "Certain Relationships and Related Party Transactions" were entered into after presentation, consideration and approval by our board of directors.

## PRINCIPAL STOCKHOLDERS

The following table sets forth information regarding the beneficial ownership of our common stock as of April 6, 2016, after giving effect to the conversion of our outstanding shares of preferred stock into shares of common stock, by:

- each of our directors and named executive officers;
- all of our directors and executive officers as a group; and
- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock.

Beneficial ownership is determined according to the rules of the SEC and generally means that a person has beneficial ownership of a security if he, she or it possesses sole or shared voting or investment power of that security, and of convertible securities that are currently exercisable or exercisable within 60 days after April 6, 2016. Shares of our common stock issuable pursuant to options or warrants, if any, are deemed outstanding for computing the percentage of the person holding such options or warrants and the percentage of any group of which the person is a member but are not deemed outstanding for computing the percentage of any other person. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the persons named in the table below have sole voting and investment power with respect to all shares of common stock shown that they beneficially own, subject to community property laws where applicable. The information does not necessarily indicate beneficial ownership for any other purpose, including for purposes of Section 13(d) and 13(g) of the Securities Act.

Our calculation of the percentage of beneficial ownership prior to this offering is based on shares of common stock outstanding as of April 6, 2016, assuming the conversion of our outstanding preferred stock into common stock, as if the conversion had occurred as of April 6, 2016. Our calculation of the percentage of beneficial ownership after this offering is based on shares of common stock outstanding immediately after the closing of this offering (assuming no exercise of the underwriters' option to purchase additional shares of our common stock).

Except as otherwise noted below, the address for persons listed in the table is c/o Rhythm Pharmaceuticals, Inc., 855 Boylston Street, Eleventh Floor, Boston, MA 02116.

| | Prior to the Offering | | After the Offering | |
|---|---|---|---|---|
| Name and Address of Beneficial Owner | Number of shares of common stock | Percent of class | Number of shares of common stock | Percent of class |
| **5% Stockholders:** | | | | |
| Rhythm Holding Company, LLC | 93,500,000 | 69.3% | | % |
| OrbiMed Private Investments V, LP[1]<br>601 Lexington Avenue, 54th Floor<br>New York, NY 10022-4629 | 17,500,000 | 13.0% | | % |
| 667, L.P. and Baker Brothers Life Sciences, L.P.[2]<br>667 Madison Avenue, 21st Floor<br>New York, NY 10065 | 8,000,000 | 5.9% | | % |
| **Directors and Named Executive Officers:** | | | | |
| Keith M. Gottesdiener, M.D.[3] | 663,828 | * | | % |
| Bart Henderson[4] | 301,862 | * | | % |
| Fred T. Fiedorek, M.D.[5] | 188,353 | * | | % |
| Todd Foley | — | — | | % |
| Ed Mathers | — | — | | % |
| Neil Exter | — | — | | % |
| Christophe R. Jean | — | — | | % |
| Jonathan T. Silverstein, J.D. | — | — | | % |
| David Meeker | — | — | | % |
| David McGirr | — | — | | % |
| All executive officers and directors as a group (11 persons)[6] | 1,373,350 | 1.0% | | % |

* Represents beneficial ownership of less than 1%.

(1) The 17,500,000 shares of series A preferred stock listed above are held by OrbiMed Private Investments V, LP, or OPI V. OrbiMed Capital GP V LLC, or GP V, is the sole general partner of OPI V, and OrbiMed Advisors LLC, or Advisors, a registered adviser under the Investment Advisers Act of 1940, as amended, is the sole managing member of GP V. Samuel D. Isaly, or Isaly, a natural person, is the managing member of, and holder of a controlling interest in, Advisors. By virtue of such relationships, GP V, Advisors and Isaly may be deemed to have voting and investment power with respect to the shares of series A preferred stock held by OPI V noted above and as a result may be deemed to have beneficial ownership over such shares of series A preferred stock. Jonathan T. Silverstein is a Member of Advisors.

(2) The 8,000,000 shares of series A preferred stock listed above are held by 667, L.P., or 667 LP, and Baker Brothers Life Sciences, L.P., or Baker Brothers Life Sciences. Baker Bros. Advisors LP, or Baker Bros. Advisors, is the investment adviser to 667 LP and Baker Brothers Life Sciences and, pursuant to amended and restated management agreements between Baker Bros. Advisors, 667 LP and Baker Brothers Life Sciences and the respective general partners of 667 LP and Baker Brother Life Sciences, Baker Bros. Advisors has complete and unlimited discretion and authority with respect to the investments and voting power over investments of 667 LP and Baker Brothers Life Sciences. Baker Bros. Advisors disclaims beneficial ownership of all shares of series A preferred stock held by 667 LP and Baker Brothers Life Sciences except to the extent of any pecuniary interest therein.

(3) Includes 663,828 shares of common stock underlying options that are exercisable within 60 days of April 6, 2016.

(4) Includes 301,862 shares of common stock underlying options that are exercisable within 60 days of April 6, 2016.

(5) Includes 188,353 shares of common stock underlying options that are exercisable within 60 days of April 6, 2016.

(6) Includes 1,373,350 shares of common stock underlying options that are exercisable within 60 days of April 6, 2016.

## DESCRIPTION OF CAPITAL STOCK

*The following description of our capital stock and provisions of our amended and restated certificate of incorporation and amended and restated bylaws as they will be in effect upon the consummation of this offering are summaries and are qualified in their entirety by reference to our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect upon the closing of this offering, the forms of which are filed as exhibits to the registration statement of which this prospectus forms a part, and by applicable law.*

Upon consummation of this offering, our authorized capital stock will consist of shares of common stock, par value $0.001 per share and shares of preferred stock, par value $0.001 per share. Unless our board of directors determines otherwise, we will issue all shares of our capital stock in uncertificated form. Assuming (1) the conversion of all outstanding shares of our preferred stock into shares of our common stock and (2) the issuance by us of shares of common stock in this offering, there will be shares of common stock and no shares of preferred stock outstanding upon closing of this offering.

### Common Stock

Holders of shares of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of stockholders. The holders of a plurality of the shares of our common stock entitled to vote in any election of directors can elect all of the directors standing for election.

Holders of shares of our common stock are entitled to receive dividends when and if declared by our board of directors out of funds legally available therefor, subject to any statutory or contractual restrictions on the payment of dividends and to any restrictions on the payment of dividends imposed by the terms of any outstanding preferred stock.

Upon our dissolution or liquidation or the sale of all or substantially all of our assets, after payment in full of all amounts required to be paid to creditors and to the holders of preferred stock having liquidation preferences, if any, the holders of shares of our common stock will be entitled to receive pro rata our remaining assets available for distribution.

Holders of shares of our common stock do not have preemptive, subscription, redemption or conversion rights.

### Preferred Stock

Upon consummation of this offering, each share of our preferred stock will be converted into one share of our common stock.

Our amended and restated certificate of incorporation authorizes our board of directors to establish one or more series of preferred stock (including convertible preferred stock). Unless required by law or by any stock exchange, the authorized shares of preferred stock will be available for issuance without further action by our stockholders. Our board of directors is able to determine, with respect to any series of preferred stock, the terms and rights of that series, including:

- the designation of the series;
- the number of shares of the series, which our board may, except where otherwise provided in the preferred stock designation, increase or decrease, but not below the number of shares then outstanding;
- the voting rights, if any, of the holders of the series;
- whether dividends, if any, will be cumulative or non-cumulative and the dividend rate of the series;

- the dates at which dividends, if any, will be payable;
- the rights of priority and amounts payable, if any, on shares of the series in the event of any voluntary or involuntary liquidation, dissolution or winding-up of the affairs of our company;
- the redemption rights and price or prices, if any, for shares of the series;
- the terms of any purchase, retirement or sinking fund, if any, provided for shares of the series;
- the terms, if any, upon which the shares of the series will be convertible into or exchangeable for shares of any other class, classes or series or other securities, whether or not issued by our company or any other entity;
- restrictions, if any, upon issuance of indebtedness of our company so long as any shares of the series are outstanding; and
- restrictions, if any, on the issuance of shares of the same series or of any other class or series.

We could issue a series of preferred stock that could, depending on the terms of the series, impede or discourage an acquisition attempt or other transaction that some, or a majority, of our stockholders might believe to be in their best interests or in which our stockholders might receive a premium for their shares of common stock over the market price of the shares of common stock.

**Options**

Upon completion of the offering, we will have options to purchase our common stock outstanding. See "Executive and Director Compensation—Employee Benefit and Stock Plans" for a discussion of the terms of the Plan.

**Authorized but Unissued Capital Stock**

The Delaware General Corporation Law does not require stockholder approval for any issuance of authorized shares. However, the listing requirements of NASDAQ, which would apply so long as our common stock remains listed on NASDAQ, require stockholder approval of certain issuances equal to or exceeding 20% of the then outstanding voting power or then outstanding number of shares of common stock. These additional shares may be used for a variety of corporate purposes, including future public offerings, to raise additional capital or to facilitate acquisitions.

One of the effects of the existence of unissued and unreserved common stock or preferred stock may be to enable our board of directors to issue shares to persons friendly to current management, which issuance could render more difficult or discourage an attempt to obtain control of our company by means of a merger, tender offer, proxy contest or otherwise, and thereby protect the continuity of our management and possibly deprive our stockholders of opportunities to sell their shares of common stock at prices higher than prevailing market prices.

**Anti-Takeover Effects of Provisions of Delaware Law and Our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws**

***Undesignated Preferred Stock***

The ability to authorize undesignated preferred stock will make it possible for our board of directors to issue preferred stock with super voting, special approval, dividend or other rights or preferences on a discriminatory basis that could impede the success of any attempt to acquire us or otherwise effect a change in control of us. These and other provisions may have the effect of deferring, delaying or discouraging hostile takeovers, or changes in control or management of our company.

***Requirements for Advance Notification of Stockholder Meetings, Nominations and Proposals***

Our amended and restated certificate of incorporation provides that special meetings of the stockholders may be called only by or at the direction of our board of directors, two or more of our directors, the chairman of our board, our chief executive officer or one or more holders of at least a minimum percentage of the voting power of the outstanding shares of our capital stock. This minimum will initially be 25% and will automatically increase to 51% on the first date on which the holders of outstanding shares of our common stock hold more than 51% of the voting power of all outstanding shares of our capital stock. Our amended and restated bylaws prohibit the conduct of any business at a special meeting other than as specified in the notice for such meeting. These provisions may have the effect of deferring, delaying or discouraging hostile takeovers, or changes in control or management of our company.

Our amended and restated bylaws establish advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of the board of directors or a committee of the board of directors. In order for any matter to be "properly brought" before a meeting, a stockholder will have to comply with advance notice requirements and provide us with certain information. Additionally, vacancies and newly created directorships may be filled only by a vote of a majority of the directors then in office, even though less than a quorum, and not by the stockholders. Our amended and restated bylaws will allow the presiding officer at a meeting of the stockholders to adopt rules and regulations for the conduct of meetings which may have the effect of precluding the conduct of certain business at a meeting if the rules and regulations are not followed. These provisions may also defer, delay or discourage 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.

Our amended and restated certificate of incorporation provides that the board of directors is expressly authorized to adopt, amend or repeal our amended and restated bylaws.

***No Cumulative Voting***

The Delaware General Corporation Law provides that stockholders are not entitled to cumulate votes in the election of directors unless our amended and restated certificate of incorporation provides otherwise. Our amended and restated certificate of incorporation does not expressly provide for cumulative voting.

***Removal of Directors***

In accordance with the terms of our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the closing of this offering, our board of directors will be divided into three staggered classes of directors of the same or nearly the same number and each will be assigned to one of the three classes. At each annual meeting of the stockholders, a class of directors will be elected for a three-year term to succeed the directors of the same class whose terms are then expiring. The initial term of office of the directors of Class I shall expire as of the first annual meeting of our stockholders following the closing of this offering; the initial term of office of the directors of Class II shall expire as of the second annual meeting of our stockholders following the closing of this offering; and the initial term of office of the directors of Class III shall expire as of the third annual meeting of our stockholders following the closing of this offering.

- Our Class I directors will be and ;
- Our Class II directors will be , and ; and
- Our Class III directors will be , and .

Our amended and restated certificate of incorporation and amended and restated bylaws provide that the number of our directors shall be fixed from time to time by a resolution of the majority of our board of directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class shall consist of one third of the board of directors.

The division of our board of directors into three classes with staggered three-year terms may delay or prevent stockholder efforts to effect a change of our management or a change in control.

Our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the closing of this offering also provide that our directors may be removed only for cause by the affirmative vote of the holders of at least 75% of the outstanding shares of capital stock entitled to vote in the election of directors or class of directors, voting together as a single class, at a meeting of the stockholders called for that purpose. This requirement of a supermajority vote to remove directors could enable a minority of our stockholders to prevent a change in the composition of our board. Any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by the vote of a majority of the remaining directors then in office, although less than a quorum, or by the sole remaining director.

***Amendments to Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws***

The Delaware General Corporation Law provides that, unless a corporation's certificate of incorporation provides otherwise, the affirmative vote of holders of shares constituting a majority of the votes of all shares entitled to vote may approve amendments to the certificate of incorporation.

Our amended and rested certificate of incorporation and amended and restated bylaws will provide that the affirmative vote of holders of at least 75% of the outstanding shares of capital stock, voting together as a single class, and entitled to vote in the election of directors will be required to amend, alter, change or repeal the amended and restated certificate of incorporation and the amended and restated bylaws. This requirement of a supermajority vote to approve amendments to our amended and restated certificate of incorporation and amended and restated bylaws could enable a minority of our stockholders to exercise veto power over such amendments.

***Stockholder Action by Written Consent***

Pursuant to Section 228 of the Delaware General Corporation Law, any action required to be taken at any annual or special meeting of the stockholders may be taken without a meeting, without prior notice and without a vote if a consent or consents in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares of our stock entitled to vote thereon were present and voted, unless the corporation's certificate of incorporation provides otherwise. Our amended and restated certificate of incorporation will prohibit the taking of any action of our stockholders by written consent without a meeting.

***Delaware Anti-Takeover Statute***

We have not opted out of, and therefore are subject to, Section 203 of the Delaware General Corporation Law. Section 203 provides that, subject to certain exceptions specified in the law, a publicly-held Delaware corporation shall not engage in certain "business combinations" with any

"interested stockholder" for a three-year period after the date of the transaction in 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 that resulted in the stockholder becoming an interested stockholder;

- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the 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 number of shares outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned under 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

- on or subsequent to the date of the transaction, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least $66^{2}/_{3}\%$ of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction 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. Since Section 203 will apply to us, we expect that it would have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. In such event, we would also anticipate that Section 203 could discourage attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

Under certain circumstances, Section 203 makes it more difficult for a person who would be an "interested stockholder" to effect various business combinations with a corporation for a three-year period. The provisions of Section 203 may encourage companies interested in acquiring our company to negotiate in advance with our board of directors because the stockholder approval requirement would be avoided if our board of directors approves either the business combination or the transaction that results in the stockholder becoming an interested stockholder. These provisions also may make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

**Registration Rights**

Following the closing of this offering, the holders of shares of our common stock, or their transferees, will be entitled to the registration rights set forth below with respect to registration of the resale of such shares under the Securities Act pursuant to the investors' rights agreement, by and among us and certain of our stockholders.

***Demand Registration Rights***

At any time after 180 days after the effective date of this public offering as set forth on the cover page of this prospectus, upon the written request of at least a majority of the holders of the registrable securities then outstanding that we file a registration statement under the Securities Act covering the registration of registrable securities owned by such holder(s) having an anticipated aggregate offering price, net of selling expenses, of at least $15.0 million, we will be obligated to notify all holders of registrable securities of such request. As soon as practicable thereafter, and in any event within 60 days after the date such request is received, we will be required to register the sale on a registration statement on Form S-1 of all registrable securities that holders may request to be registered, subject to specified exceptions, conditions and

limitations. We may postpone the filing of a registration statement for up to 120 days once in any 12-month period if in the good faith judgment of our board of directors such registration would be materially detrimental to us, and we are not required to effect the filing of a registration statement during the period starting with the date that is 60 days prior to our good faith estimate of the date of filing of a registration statement initiated by us and ending on a date 180 days after the effective date of a registration statement initiated by us. The underwriters of any underwritten offering will have the right to limit the number of shares having registration rights to be included in the registration statement.

***"Piggyback" Registration Rights***

If we register any securities for public sale, holders of registration rights will have the right to include their shares in the registration statement. The underwriters of any underwritten offering will have the right to limit the number of registrable securities to be included in the registration statement, but such number may not be below 30% of the total number of shares included in such registration statement. The holders of registration rights have waived any and all rights to which they would otherwise be entitled to have their shares included in this offering.

***Form S-3 Registration Rights***

If we are eligible to file a registration statement on Form S-3, holders of at least 10% of our registrable securities then outstanding have the right to request that we file a registration statement on Form S-3, so long as the aggregate price to the public of the securities to be sold under the registration statement on Form S-3 is at least $10.0 million or consists of all the remaining registrable securities, and subject to specified exceptions, conditions and limitations.

***Expenses of Registration***

Pursuant to the investors' rights agreement, we are generally required to bear all registration expenses, including the fees and expenses of one counsel, not to exceed $50,000, representing the selling holders, incurred in connection with the demand, piggyback and Form S-3 registrations described above. We are not required to bear selling expenses, which include all underwriting discounts, selling commissions, stock transfer taxes applicable to the sale of registrable securities and fees and disbursements of any additional counsel for any selling holder. We are not required to pay registration expenses if the registration request under the investors' rights agreement is withdrawn at the request of the holders of a majority of the registrable securities unless (i) the holders of a majority of the registrable securities then outstanding agree to forfeit their right to one registration under the investors' rights agreement or (ii) the withdrawal is due to the discovery of a material adverse change in our business.

***Termination of Registration Rights***

The demand, piggyback and Form S-3 registration rights discussed above will terminate as to a given holder of registrable securities upon the earlier of (i) five years following the closing of this offering or (ii) such time as SEC Rule 144 or another similar exemption under the Securities Act is available for the sale of all shares held by the holder during a three-month period without registration and without the requirement for us to be in compliance with the current public information required under SEC Rule 144(c)(1).

**Limitations of Liability and Indemnification**

See "Executive and Director Compensation—Limitation on Liability and Indemnification Matters."

**Market Listing**

We intend to apply to list our common stock on the NASDAQ Global Market under the symbol "RYTM."

**Transfer Agent and Registrar**

Upon the completion of this offering, the transfer agent and registrar for our common stock will be Computershare.

## MATERIAL UNITED STATES FEDERAL INCOME AND ESTATE TAX CONSEQUENCES TO NON-U.S. HOLDERS OF OUR COMMON STOCK

The following is a discussion of the material U.S. federal income and estate tax consequences of the acquisition, ownership, and disposition of our common stock to a non-U.S. holder that purchases shares of our common stock for cash in this offering. For purposes of this discussion, a "non-U.S. holder" means a beneficial owner (other than a partnership or other pass-through entity) of our common stock that is not, for U.S. federal income tax purposes:

- an individual who is a citizen or resident alien of the United States;
- a corporation or any other organization taxable as a corporation for U.S. federal income tax purposes, created or organized in the United States or under the laws of the United States or of any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust if (i) the trust is subject to the primary supervision of a U.S. court and all substantial decisions of the trust are controlled by one or more U.S. persons or (ii) the trust has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

This discussion does not address the tax treatment of partnerships (or other entities that are treated as partnerships, grantor trusts, or other pass-through entities for U.S. federal income tax purposes) or persons that hold their common stock through partnerships, grantor trusts or such other pass-through entities. The tax treatment of a partner in a partnership or a holder of an interest in another pass-through entity that will hold our common stock generally will depend upon the status of the partner or interest holder and the activities of the partner or interest holder and the partnership or other pass-through entity, as applicable. Such a partner or interest holder should consult his, her, or its own tax advisor regarding the tax consequences of the acquisition, ownership and disposition of our common stock through a partnership or other pass-through entity, as applicable.

This discussion is based upon the provisions of the Code, the U.S. Treasury regulations promulgated thereunder, judicial decisions, and published rulings, administrative procedures and other guidance of the Internal Revenue Service, which we refer to as the IRS, all as in effect as of the date hereof. These authorities are subject to change and to differing interpretations, possibly with retroactive effect, which could result in U.S. federal income tax consequences different from those summarized below. No ruling has been or will be sought from the IRS with respect to the matters summarized below, and there can be no assurance that the IRS will not take a contrary position regarding the U.S. federal income tax consequences of the acquisition, ownership, or disposition of our common stock, or that any such contrary position would not be sustained by a court.

This discussion is not a complete analysis of all of the potential U.S. federal income and estate tax consequences relating to the acquisition, ownership, and disposition of our common stock by non-U.S. holders, nor does it address any U.S. federal gift tax consequences, any tax consequences arising under any state, local, or non-U.S. tax laws, the impact of any applicable income tax treaty, any consequences under the Medicare contribution tax on net investment income, the alternative minimum tax or any consequences under other U.S. federal tax laws. In addition, this discussion does not address tax consequences resulting from a non-U.S. holder's particular circumstances or to non-U.S. holders that may be subject to special tax rules, including, without limitation:

- non-U.S. governments, agencies or instrumentalities thereof, or entities they control;
- "controlled foreign corporations" and their shareholders;
- "passive foreign investment companies" and their shareholders;

- partnerships, grantor trusts or other entities that are treated as pass-through entities for U.S. federal income tax purposes, and their owners;
- corporations that accumulate earnings to avoid U.S. federal income tax;
- former citizens or former long-term residents of the United States;
- banks, insurance companies or other financial institutions;
- tax-exempt pension funds or other tax-exempt organizations;
- persons who acquired our common stock pursuant to the exercise of employee stock options or otherwise as compensation;
- tax-qualified retirement plans;
- traders, brokers or dealers in securities, commodities or currencies;
- persons who hold our common stock as a position in a hedging transaction, wash sale, "straddle," "conversion transaction" or other risk reduction transaction or synthetic security;
- 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);
- persons who own or have owned, or are deemed to own or to have owned, more than 5% of our common stock (except to the extent specifically set forth below); or
- persons deemed to sell our common stock under the constructive sale provisions of the Code.

Prospective investors should consult their tax advisors regarding the particular U.S. federal income tax consequences to them of acquiring, owning and disposing of our common stock, as well as any tax consequences arising under any state, local or foreign tax laws and any other U.S. federal tax laws. Prospective investors should also consult their tax advisors regarding the potential impact of any applicable income tax treaty between the United States and such prospective investor's country of residence and of the rules described below under the heading "Foreign Account Tax Compliance Act."

**Distributions on Common Stock**

As described in the section entitled "Dividend Policy," 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 dividends on our common stock in the foreseeable future. The disclosure in this section addresses the consequences should our board of directors, in the future, determine to make a distribution of cash or property with respect to our common stock (other than certain distributions of stock which may be made free of tax), or to effect a redemption that is treated for tax purposes as a distribution. Any such distribution will generally constitute a dividend for U.S. federal tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent such a distribution exceeds both our current and our accumulated earnings and profits, such excess will be allocated ratably among the shares of common stock with respect to which the distribution is made, will constitute a return of capital, and will first be applied against and reduce the non-U.S. holder's adjusted tax basis in those shares of common stock, but not below zero. Distributions in excess of our current and accumulated earnings and profits and in excess of a non-U.S. holder's tax basis in that non-U.S. holder's shares of common stock then will be treated as gain from the sale of that common stock, subject to the tax treatment described below under "Gain on Disposition of Common Stock." A non-U.S. holder's adjusted tax basis in a share of common stock is generally the purchase price of the share, reduced by the amount of any distributions constituting a return of capital with respect to that share.

Any dividend paid to a non-U.S. holder of our common stock generally will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividend, or such lower rate as may be

specified by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence. If a non-U.S. holder is eligible for benefits under an income tax treaty and wishes to claim a reduced rate of withholding, the non-U.S. holder generally will be required to provide us or our paying agent with a properly completed IRS Form W-8BEN, Form W-8BEN-E, or other applicable form, certifying under penalties of perjury the non-U.S. holder's qualification for the reduced rate. This certification must be provided to us or our paying agent prior to the payment of the dividend and may be required to be updated periodically. Special certification requirements apply to non-U.S. holders that hold common stock through certain foreign intermediaries. Non-U.S. holders that do not timely provide the required certifications, but that qualify for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. If we are not able to determine whether or not a distribution will exceed current and accumulated earnings and profits at the time the distribution is made, we may withhold tax on the entire amount of any distribution at the same rate as we would withhold on a dividend. However, a non-U.S. holder may obtain a refund of amounts that we withhold to the extent attributable to the portion of the distribution in excess of our current and accumulated earnings and profits.

If a non-U.S. holder holds our common stock in connection with the conduct of a trade or business in the U.S., and dividends paid on the common stock are effectively connected with the non-U.S. holder's U.S. trade or business (and, if required by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence, are attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the U.S., as defined under the applicable treaty), the non-U.S. holder will be exempt from U.S. federal withholding tax on the dividends. To claim the exemption, the non-U.S. holder must furnish a properly executed IRS Form W-8ECI (or other applicable form) prior to the payment of the dividends. Any dividends paid on our common stock that are effectively connected with a non-U.S. holder's U.S. trade or business (and satisfy any other applicable treaty requirements) generally will be subject to U.S. federal income tax on a net income basis at the regular graduated U.S. federal income tax rates generally applicable to U.S. persons (as defined in the Code). A non-U.S. holder that is treated as a corporation for U.S. federal income tax purposes also may be subject to an additional branch profits tax equal to 30% (or such lower rate as is specified by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence) of a portion of its earnings and profits for the taxable year that are effectively connected with a U.S. trade or business, as adjusted for certain items.

**Gain on Disposition of Common Stock**

Subject to the discussion below regarding backup withholding and foreign accounts, a non-U.S. holder generally will not be subject to U.S. federal income tax on any gain realized upon the sale, exchange, or other taxable disposition of our common stock unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a U.S. trade or business (and, if required by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence, the gain is attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the U.S.), in which case the non-U.S. holder will generally be required to pay tax on the gain derived from the sale, exchange, or other taxable disposition (net of certain deductions or credits) under regular graduated U.S. federal income tax rates generally applicable to U.S. persons, and in the case of a non-U.S. holder that is treated as a corporation for U.S. federal income tax purposes, such non-U.S. holder may be subject to a branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence;

- the non-U.S. holder is an individual who is present in the U.S. for a period or periods aggregating 183 days or more during the taxable year in which the sale, exchange, or other taxable disposition occurs and certain other conditions are met, in which case the non-U.S. holder will be subject to U.S. federal income tax at a flat 30% rate (or such lower rate as is specified by an applicable income

tax treaty between the United States and such non-U.S. holder's country of residence) on the net gain derived from the sale, exchange, or other taxable disposition, which gain may be offset by U.S. source capital losses (even though the non-U.S. holder is not considered a resident of the U.S.) provided that the non-U.S. holder has timely filed U.S. federal income tax returns reporting those losses; or

- our common stock is a "United States real property interest" by reason of our status as a "United States real property holding corporation," or USRPHC, for U.S. federal income tax purposes during the five-year period preceding such sale, exchange or other taxable disposition (or the non-U.S. holder's holding period, if shorter). Generally, a corporation is a USRPHC only if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business.

We believe we are not now and we do not anticipate becoming a USRPHC. However, there can be no assurance that we are not now a USRPHC or will not become one in the future. Even if we are or become a USRPHC, for so long as our common stock is "regularly traded," as defined by applicable U.S. Treasury regulations, on an established securities market, sales of our common stock generally will not be subject to tax for non-U.S. holders that have held 5% or less of our common stock, actually or constructively, during the five-year period preceding such non-U.S. holder's sale, exchange or other taxable disposition of our common stock (or the non-U.S. holder's holding period, if shorter). If we are determined to be a USRPHC and the foregoing exception does not apply, then a purchaser may withhold 15% of the proceeds payable to a non-U.S. holder from a sale of our common stock and the non-U.S. holder generally will be taxed on its net gain derived from the disposition at the graduated U.S. federal income tax rates applicable to U.S. persons.

**U.S. Federal Estate Tax**

Shares of our common stock that are owned or treated as owned at the time of death by an individual who is not a citizen or resident of the United States, as specifically defined for U.S. federal estate tax purposes, are considered U.S. situs assets and will be included in the individual's gross estate for U.S. federal estate tax purposes. Such shares, therefore, may be subject to U.S. federal estate tax, unless an applicable estate tax or other treaty between the United States and such individual's country of residence provides otherwise.

**Information Reporting and Backup Withholding**

Generally, we or certain financial middlemen must report annually to the IRS and to each non-U.S. holder the gross amount of dividends and other distributions on our common stock paid to the non-U.S. holder and the amount of tax withheld, if any, with respect to those distributions. Pursuant to applicable income tax treaties or other agreements, the IRS may make these reports available to tax authorities in the non-U.S. holder's country of residence or incorporation.

A non-U.S. holder may be subject to backup withholding with respect to dividends paid on shares of our common stock, unless, generally, the non-U.S. holder certifies under penalties of perjury (usually on IRS Form W-8BEN or W-8BEN-E) that the non-U.S. holder is not a U.S. person or otherwise establishes an exemption. The backup withholding rate is currently 28%. Dividends that are paid to non-U.S. holders subject to the withholding of U.S. federal income tax, as described above under the heading "Distributions on Common Stock" generally will be exempt from U.S. backup withholding.

Additional rules relating to information reporting requirements and backup withholding with respect to payments of the proceeds from the disposition of shares of our common stock are as follows:

- If the proceeds are paid to or through the U.S. office of a broker, the proceeds generally will be subject to backup withholding and information reporting, unless the non-U.S. holder certifies under

penalties of perjury (usually on IRS Form W-8BEN or W-8BEN-E) that the non-U.S. holder is not a U.S. person and satisfies certain other requirements or otherwise establishes an exemption.

- If the proceeds are paid to or through a non-U.S. office of a broker that is not a U.S. person and is not a foreign person with certain specified U.S. connections, which we refer to below as a "U.S.-related person," information reporting and backup withholding generally will not apply.

- If the proceeds are paid to or through a non-U.S. office of a broker that is a U.S. person or a U.S.-related person, the proceeds generally will be subject to information reporting (but not to backup withholding), unless the non-U.S. holder certifies under penalties of perjury (usually on IRS Form W-8BEN or W-8BEN-E) that the non-U.S. holder is not a U.S. person. A "U.S.-related person" includes (i) an entity classified as a "controlled foreign corporation" for U.S. federal income tax purposes, (ii) a foreign person, 50% or more of whose gross income from certain periods is effectively connected with a U.S. trade or business, or (iii) a foreign partnership if at any time during its tax year (a) one or more of its partners are U.S. persons who, in the aggregate, hold more than 50% of the income or capital interests of the partnership or (b) the foreign partnership is engaged in a U.S. trade or business.

Backup withholding is not an additional tax. Any amounts withheld from a non-U.S. holder under the backup withholding rules may be allowed as a refund or a credit against the non-U.S. holder's U.S. federal income tax liability, if any, provided that the non-U.S. holder timely furnishes the required information to the IRS. Non-U.S. holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them.

**Foreign Account Tax Compliance Act**

Sections 1471 to 1474 of the Code (commonly referred to as the Foreign Account Tax Compliance Act, or FATCA) generally impose withholding tax on certain types of payments made to "foreign financial institutions" (as defined in the Code) and other non-U.S. entities unless those institutions and entities meet additional certification, information reporting and other requirements. FATCA generally imposes a 30% withholding tax on dividends on, or gross proceeds from the sale or other disposition of, our common stock paid to a foreign financial institution unless the foreign financial institution enters into an agreement with the U.S. Treasury to, among other things, (i) undertake to identify accounts held by certain U.S. persons (including certain equity and debt holders of such institution) or by U.S.-owned foreign entities, (ii) annually report certain information about such accounts, and (iii) withhold 30% on payments to account holders whose actions prevent it from complying with these reporting and other requirements. In addition, subject to certain exceptions, the legislation imposes a 30% withholding tax on the same types of payments to a "non-financial foreign entity" (as defined in the Code) unless the entity certifies that it does not have any substantial U.S. owners (which generally include any U.S. persons who directly or indirectly own more than 10% of the entity) or furnishes identifying information regarding each such substantial U.S. owner or agrees to report that information to the IRS. These withholding taxes will be imposed on dividends paid on our common stock, and, after December 31, 2018, on gross proceeds from sales or other dispositions of our common stock. Withholding under FATCA generally will not be reduced or limited by bilateral income tax treaties. However, intergovernmental agreements between the U.S. and other countries with respect to the implementation of FATCA and non-U.S. laws, regulations and other authorities enacted or issued with respect to those intergovernmental agreements may modify the FATCA requirements described above. Non-U.S. holders should consult their own tax advisors regarding the possible implications of FATCA on their investment in our common stock and the entities through which they hold our common stock, including, without limitation, the process and deadlines for meeting the applicable requirements to prevent the imposition of the 30% withholding tax under FATCA.

## SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for shares of our common stock. We cannot predict the effect, if any, that future sales of shares of common stock, or the availability for future sales of shares of common stock, will have on the market price of shares of our common stock prevailing from time to time. The sale of substantial amounts of shares of our common stock in the public market, or the perception that such sales could occur, could harm the prevailing market price of shares of our common stock.

Currently shares of our common stock are outstanding. Upon the conversion of our preferred stock to common stock prior to the closing of this offering, shares of our common stock will be outstanding, and there will be holders of our common stock.

Upon completion of this offering, we will have a total of shares of our common stock outstanding (or shares of common stock if the underwriters exercise in full their option to purchase additional shares of common stock). Of those shares, shares, including the shares sold in this offering, will be freely tradable without restriction or further registration under the Securities Act by persons other than our "affiliates." Under the Securities Act, an "affiliate" of an issuer is a person who directly or indirectly controls, is controlled by or is under common control with that issuer. In addition, shares of common stock may be granted under the Plan.

Our amended and restated certificate of incorporation authorizes us to issue additional shares of common stock and options, rights, warrants and appreciation rights relating to common stock for the consideration and on the terms and conditions established by our board of directors in its sole discretion. In accordance with the Delaware General Corporation Law and the provisions of our amended and restated certificate of incorporation, we may also issue preferred stock that has designations, preferences, rights, powers and duties that are different from, and may be senior to, those applicable to shares of common stock. See "Description of Capital Stock."

### Lock-Up Agreements

We, along with our directors, executive officers and all of our other stockholders have agreed with the underwriters that for a period of 180 days (the restricted period), after the date of this prospectus, subject to specified exceptions, we or they will not offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of common stock or any securities convertible into or exercisable or exchangeable for shares of common stock, or enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the common stock. All of our outstanding shares are subject to a lock-up agreement. Upon expiration of the "restricted" period, certain of our stockholders will have the right to require us to register their shares under the Securities Act. See "—Registration Rights" below and "Description of Capital Stock—Registration Rights."

After this offering, certain of our employees, including our executive officers and/or directors, may enter into written trading plans that are intended to comply with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Sales under these trading plans would not be permitted until the expiration of the lock-up agreements relating to the offering described above.

### Registration Rights

Upon closing of this offering, the holders of shares of our common stock will be entitled to rights with respect to the registration of their shares under the Securities Act, subject to the lock-up agreements described under "—Lock-Up Agreements" above. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities

Act, except for shares purchased by affiliates, immediately upon the effectiveness of the registration statement of which this prospectus is a part. Any sales of securities by these stockholders could have a material adverse effect on the trading price of our common stock. See "Description of Capital Stock—Registration Rights."

**Rule 144**

In general, under Rule 144 a person (or persons whose shares are aggregated) who may be deemed our affiliate is entitled to sell within any three-month period a number of restricted securities that does not exceed the greater of 1% of the then outstanding shares of common stock and the average weekly trading volume during the four calendar weeks preceding each such sale, provided that at least six months has elapsed since such shares of common stock were acquired from us or any affiliate of ours and certain manner of sale, notice requirements and requirements as to availability of current public information about us are satisfied. Any person who is deemed to be our affiliate must also comply with such provisions of Rule 144 (other than the six-month holding period requirement) in order to sell shares of common stock which are not restricted securities (such as shares of common stock acquired by affiliates through purchases in the open market following this offering). Upon completion of this offering, shares of our common stock will be "restricted securities" as such term is defined in Rule 144. A person who is not our affiliate, and who has not been our affiliate at any time during the 90 days preceding any sale, is entitled to sell shares of common stock (i) subject only to the requirements as to availability of current public information about us, provided that a period of at least six months has elapsed since the shares of common stock were acquired from us or any affiliate of ours, and (ii) without regard to the requirements as to availability of current public information about us or any other requirement of Rule 144, provided that at least one year has elapsed since the shares of common stock were acquired from us or any affiliate of ours.

**Stock Options**

As soon as practicable after the completion of this offering, we intend to file a Form S-8 registration statement under the Securities Act to register shares of our common stock subject to options outstanding or reserved for issuance under the Plan. This registration statement will become effective immediately upon filing, and shares covered by this registration statement will thereupon be eligible for sale in the public markets, subject to vesting restrictions, the lock-up agreements described above and Rule 144 limitations applicable to affiliates. For a more complete discussion of our stock plans, see "Executive and Director Compensation—Employee Benefit and Stock Plans."

## UNDERWRITING

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus, the underwriters named below, for whom Morgan Stanley & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated are acting as representatives, have severally agreed to purchase, and we have agreed to sell to them, severally, the number of shares indicated below:

| Underwriter | Number of Shares |
|---|---|
| Morgan Stanley & Co. LLC | |
| Merrill Lynch, Pierce, Fenner & Smith Incorporated | |
| Piper Jaffray & Co. | |
| Needham & Company, LLC | |
| Total | |

The underwriters and the representatives are collectively referred to as the "underwriters" and the "representatives," respectively. The underwriters are offering the shares of common stock subject to their acceptance of the shares from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the shares of common stock offered by this prospectus are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to take and pay for all of the shares of common stock offered by this prospectus if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters' option to purchase additional shares described below.

The underwriters initially propose to offer part of the shares of common stock directly to the public at the offering price listed on the cover page of this prospectus and part to certain dealers. After the initial offering of the shares of common stock, the offering price and other selling terms may from time to time be varied by the representatives.

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to additional shares of common stock at the public offering price listed on the cover page of this prospectus, less underwriting discounts and commissions. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional shares of common stock as the number listed next to the underwriter's name in the preceding table bears to the total number of shares of common stock listed next to the names of all underwriters in the preceding table.

The following table shows the per share and total public offering price, underwriting discounts and commissions, and proceeds before expenses to us. These amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase up to an additional shares of common stock.

| | Per Share | Total | |
|---|---|---|---|
| | | No Exercise | Full Exercise |
| Public offering price | $ | $ | $ |
| Underwriting discounts and commissions to be paid by us | $ | $ | $ |
| Proceeds, before expenses, to us | $ | $ | $ |

The estimated offering expenses payable by us, exclusive of the underwriting discounts and commissions, are approximately $ . We have agreed to reimburse the underwriters for expenses relating to clearance of this offering with the Financial Industry Regulatory Authority up to $30,000.

The underwriters have informed us that they do not intend sales to discretionary accounts to exceed 5% of the total number of shares of common stock offered by them.

We intend to apply to have our common stock approved for quotation on the NASDAQ Global Market under the trading symbol "RYTM."

We and all directors and officers and the holders of substantially all of our outstanding stock and stock options have agreed that, without the prior written consent of Morgan Stanley & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated on behalf of the underwriters, we and they will not, during the period ending 180 days after the date of this prospectus, the restricted period:

- offer, sell, contract to sell, pledge or otherwise dispose of, (or enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition (whether by actual disposition or effective economic disposition due to cash settlement or otherwise), directly or indirectly) any capital stock or any securities convertible into, or exercisable or exchangeable for such capital stock;

- file any registration statement with the SEC (other than a registration statement on Form S-8) relating to the offering of any shares of capital stock or any securities convertible into or exercisable or exchangeable for capital stock; or

- establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Exchange Act and the rules and regulations of the SEC promulgated thereunder with respect to any shares of capital stock or any securities convertible into or exercisable or exchangeable for capital stock;

whether any such transaction described above is to be settled by delivery of common stock or such other securities, in cash or otherwise. In addition, we and each such person agrees that, without the prior written consent of Morgan Stanley & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated on behalf of the underwriters, we or such other person will not, during the restricted period, make any demand for, or exercise any right with respect to, the registration of any shares of common stock or any security convertible into or exercisable or exchangeable for common stock.

The restrictions described in the immediately preceding paragraph do not apply to:

- the sale of shares to the underwriters; or

- the issuance by us of shares of common stock upon the exercise of an option or a warrant or the conversion of a security outstanding on the date of this prospectus of which the underwriters have been advised in writing;

- transactions by any person other than us relating to shares of common stock or other securities acquired in open market transactions after the completion of the offering of the shares; provided that no filing under Section 16(a) of the Exchange Act is required or voluntarily made in connection with subsequent sales of the common stock or other securities acquired in such open market transactions; or

- the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of common stock, provided that (i) such plan does not provide for the transfer of common stock during the restricted period and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required or voluntarily made regarding the establishment of such plan, such announcement or filing shall include a statement to the effect that no transfer of common stock may be made under such plan during the restricted period.

Morgan Stanley & Co. LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated, in their sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time.

In order to facilitate the offering of the common stock, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. Specifically, the underwriters may sell more shares than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriters under the option. The underwriters can close out a covered short sale by exercising the option or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriters will consider, among other things, the open market price of shares compared to the price available under the option. The underwriters may also sell shares in excess of the option, creating a naked short position. 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 common stock in the open market after pricing that could adversely affect investors who purchase in this offering. As an additional means of facilitating this offering, the underwriters may bid for, and purchase, shares of common stock in the open market to stabilize the price of the common stock. These activities may raise or maintain the market price of the common stock above independent market levels or prevent or retard a decline in the market price of the common stock. The underwriters are not required to engage in these activities and may end any of these activities at any time.

We and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act.

A prospectus in electronic format may be made available on websites maintained by one or more underwriters, or selling group members, if any, participating in this offering. The representatives may agree to allocate a number of shares of common stock to underwriters for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters that may make Internet distributions on the same basis as other allocations.

The underwriters and their respective 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. Certain of the underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for us, for which they received or will receive customary fees and expenses.

In addition, in the ordinary course of their various business activities, the underwriters and their respective 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 may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve our securities and instruments. The underwriters and their respective affiliates may also make investment recommendations 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 or short positions in such securities and instruments.

**Pricing of the Offering**

Prior to this offering, there has been no public market for our common stock. The initial public offering price was determined by negotiations between us and the representatives. Among the factors considered in determining the initial public offering price were our future prospects and those of our industry in general, our sales, earnings and certain other financial and operating information in recent

periods, and the price-earnings ratios, price-sales ratios, market prices of securities, and certain financial and operating information of companies engaged in activities similar to ours.

**Selling Restrictions**

***European Economic Area***

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive, each, a Relevant Member State, an offer to the public of any shares of our common stock 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 our 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:

(a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;

(b) 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 representatives for any such offer; or

(c) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares of our common stock shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to the public" in relation to any shares of our 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 any shares of our common stock to be offered so as to enable an investor to decide to purchase any shares of our common stock, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, 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.

***United Kingdom***

Each underwriter has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, or FSMA, received by it in connection with the issue or sale of the shares of our common stock in circumstances in which Section 21(1) of the FSMA does not apply to us; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares of our common stock in, from or otherwise involving the United Kingdom.

***Canada***

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any

resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) 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 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.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

***Notice to Prospective Investors in Switzerland***

The shares 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 document 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 document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company or the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of shares 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 shares.

***Notice to Prospective Investors in the Dubai International Financial Centre***

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority, or DFSA. This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The shares to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

***Notice to Prospective Investors in Singapore***

This prospectus has not been 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 Non-CIS Securities may not be circulated or distributed, nor may the Non-CIS Securities 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 Non-CIS Securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) 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

(b) 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 Non-CIS Securities pursuant to an offer made under Section 275 of the SFA except:

(a) 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;

(b) where no consideration is or will be given for the transfer;

(c) where the transfer is by operation of law;

(d) as specified in Section 276(7) of the SFA; or

(e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

***Notice to Prospective Investors in Hong Kong***

The securities have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) 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 which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the securities has been or may be issued or has been or may be in the possession of any person for the purposes of issue, 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 to do so 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 Securities and Futures Ordinance and any rules made under that Ordinance.

***Notice to Prospective Investors in Japan***

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this paragraph, "Japanese Person" shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

***Notice to Prospective Investors in Australia***

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission, in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001, or Corporations Act, and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons, or Exempt Investors, who are "sophisticated investors" (within the meaning of section 708(8) of the Corporations Act), "professional investors" (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

## LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Morgan, Lewis & Bockius LLP, Boston, Massachusetts. Certain legal matters in connection with this offering will be passed upon for the underwriters by Wilmer Cutler Pickering Hale and Dorr LLP, New York, New York.

## EXPERTS

The financial statements of Rhythm Pharmaceuticals, Inc. as of December 31, 2014 and 2015, and for the years then ended, included in this prospectus and the registration statement have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon appearing elsewhere herein, and are included in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 (including exhibits, schedules, and amendments) under the Securities Act with respect to the shares of common stock offered by this prospectus. This prospectus does not contain all the information set forth in the registration statement. For further information about us and the shares of common stock to be sold in this offering, you should refer to the registration statement. Statements contained in this prospectus relating to the contents of any contract, agreement or other document are not necessarily complete and are qualified in all respects by the complete text of the applicable contract, agreement or other document, a copy of which has been filed as an exhibit to the registration statement. Whenever this prospectus refers to any contract, agreement, or other document, you should refer to the exhibits that are a part of the registration statement for a copy of the contract, agreement, or document.

You may read and copy all or any portion of the registration statement or any other information we file at the SEC's public reference room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You can request copies of these documents, upon payment of a duplicating fee, by writing to the SEC. Please call the SEC at 1-800-SEC-0330 for further information about the operation of the public reference rooms. Our SEC filings, including the registration statement, are also available to you on the SEC's Website (*http://www.sec.gov*).

Upon completion of this offering, we will become subject to the information and periodic reporting requirements of the Exchange Act. Under the Exchange Act, we will file annual, quarterly and current reports, as well as proxy statements and other information with the SEC. These periodic reports, proxy statements, and other information will be available for inspection and copying at the SEC's Public Reference Room and the website of the SEC referred to above.

**RHYTHM PHARMACEUTICALS, INC.**
**INDEX TO FINANCIAL STATEMENTS**

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Management of
Rhythm Pharmaceuticals, Inc.

We have audited the accompanying balance sheets of Rhythm Pharmaceuticals, Inc. (the "Company") as of December 31, 2014 and 2015, and the related statements of operations and comprehensive loss, convertible preferred stock and stockholders' equity (deficit), and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Company's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, 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. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Rhythm Pharmaceuticals, Inc. at December 31, 2014 and 2015, and the results of its operations and its cash flows for the years then ended, in conformity with U.S. generally accepted accounting principles.

/s/ Ernst & Young LLP

Boston, Massachusetts
April 6, 2016

**RHYTHM PHARMACEUTICALS, INC.**

**BALANCE SHEETS**

**(in thousands, except share and per share data)**

| | December 31, | | Pro Forma December 31, |
|---|---|---|---|
| | 2014 | 2015 | 2015 (unaudited) |
| **Assets** | | | |
| Current assets: | | | |
| Cash and cash equivalents | $ 152 | $ 34,869 | $ 34,869 |
| Prepaid expenses and other current assets | 42 | 623 | 623 |
| Total current assets | 194 | 35,492 | 35,492 |
| Construction in progress | — | 17 | 17 |
| Deferred issuance costs | — | 1,481 | 1,481 |
| Due from Rhythm Holding Company, LLC | — | 60 | 60 |
| Restricted cash | — | 225 | 225 |
| Total assets | $ 194 | $ 37,275 | $ 37,275 |
| **Liabilities, convertible preferred stock and stockholders' equity (deficit)** | | | |
| Current liabilities: | | | |
| Accounts payable | $ 535 | $ 1,428 | $ 1,428 |
| Deferred grant income | — | 249 | 249 |
| Due to Motus Therapeutics, Inc. | — | 635 | 635 |
| Accrued expenses and other current liabilities | 17 | 2,962 | 2,962 |
| Total current liabilities | 552 | 5,274 | 5,274 |
| Commitments and contingencies (Note 9) | | | |
| Series A Convertible Preferred Stock, $1.00 par value: 40,000,000 shares authorized; 40,000,000 shares issued and outstanding at December 31, 2015, no shares issued and outstanding at December 31, 2014 or December 31, 2015 (pro forma) (aggregate liquidation preferences of $40,927 at December 31, 2015) | — | 40,000 | — |
| Stockholders' equity (deficit): | | | |
| Common stock, $0.001 par value: 150,000,000 shares authorized; 93,500,000 shares issued and outstanding at December 31, 2014, and December 31, 2015; 133,500,000 shares issued and outstanding at December 31, 2015 (pro forma) | 93 | 93 | 133 |
| Additional paid-in capital | 39,147 | 42,579 | 82,539 |
| Accumulated deficit | (39,598) | (50,671) | (50,671) |
| Total stockholders' equity (deficit) | (358) | (7,999) | 32,001 |
| Total liabilities, convertible preferred stock and stockholders' equity | $ 194 | $ 37,275 | $ 37,275 |

The accompanying notes are an integral part of these financial statements

**RHYTHM PHARMACEUTICALS, INC.**

**STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS**

**(in thousands, except share and per share data)**

| | Year Ended December 31, 2014 | Year Ended December 31 2015 |
|---|---|---|
| Operating expenses: | | |
| Research and development | $ 5,280 | $ 7,148 |
| General and administrative | 1,213 | 3,425 |
| Total operating expenses | 6,493 | 10,573 |
| Loss from operations | (6,493) | (10,573) |
| Other income (expense): | | |
| Revaluation of Series A Investor Right/Obligation | — | (500) |
| Total other income (expense): | — | (500) |
| Net loss and comprehensive loss | $ (6,493) | $ (11,073) |
| Net loss attributable to common stockholders | $ (6,493) | $ (12,000) |
| Net loss attributable to common stockholders per common share, basic and diluted (Note 2) | $ (0.07) | $ (0.13) |
| Weighted average common shares outstanding, basic and diluted | 93,500,000 | 93,500,000 |
| Pro forma net loss attributable to common stockholders per common share, basic and diluted (unaudited) | $ (0.07) | $ (0.11) |
| Pro forma weighted average common shares outstanding, basic and diluted (unaudited) | 93,500,000 | 105,038,462 |

The accompanying notes are an integral part of these financial statements

**RHYTHM PHARMACEUTICALS, INC.**

**STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)**

**(in thousands, except share and per share data)**

| | Series A Convertible Preferred Stock | | Common Stock | | Additional Paid-In Capital | Accumulated Deficit | Total Stockholders' Equity (Deficit) |
|---|---|---|---|---|---|---|---|
| | Shares | Amount | Shares | Amount | | | |
| Balance at December 31, 2013 | — | — | 93,500,000 | 93 | 31,662 | (33,105) | (1,350) |
| Equity contribution | — | — | — | — | 7,419 | — | 7,419 |
| Stock compensation expense | — | — | — | — | 66 | — | 66 |
| Net loss | — | — | — | — | — | (6,493) | (6,493) |
| Balance at December 31, 2014 | — | — | 93,500,000 | 93 | 39,147 | (39,598) | (358) |
| Equity contribution | — | — | — | — | 2,094 | — | 2,094 |
| Modification of warrant in connection with a license agreement | — | — | — | — | 923 | — | 923 |
| Stock compensation expense | — | — | — | — | 298 | — | 298 |
| Dividend to Rhythm Holding Company LLC (associated with common stock options granted to employees of Motus Therapeutics, Inc.) | — | — | — | — | 2,695 | — | 2,695 |
| Dividend to Rhythm Holding Company LLC (associated with common stock options granted to employees of Motus Therapeutics, Inc.) | — | — | — | — | (2,695) | — | (2,695) |
| Reclassification of Series A Investor Right/Obligation liability upon Series A second tranche closing | — | 883 | — | — | 117 | — | 117 |
| Issuance of Series A Convertible Preferred Stock | 40,000,000 | 39,117 | — | — | — | — | — |
| Net loss | — | — | — | — | — | (11,073) | (11,073) |
| Balance at December 31, 2015 | 40,000,000 | 40,000 | 93,500,000 | 93 | 42,579 | (50,671) | (7,999) |
| Conversion of Series A Convertible Preferred Stock into common stock on a one-to-one basis | (40,000,000) | (40,000) | 40,000,000 | 40 | 39,960 | — | 40,000 |
| Pro-forma balance at December 31, 2015 | — | — | 133,500,000 | $ 133 | $ 82,539 | $ (50,671) | $ 32,001 |

The accompanying notes are an integral part of these financial statements

**RHYTHM PHARMACEUTICALS, INC.**

**STATEMENTS OF CASH FLOWS**

**(in thousands, except share and per share data)**

| | Year Ended December 31, 2014 | Year Ended December 31, 2015 |
|---|---|---|
| **Operating activities** | | |
| Net loss | $ (6,493) | $ (11,073) |
| Adjustments to reconcile net loss to cash used in operating activities: | | |
| Stock-based compensation expense | 66 | 298 |
| Modification of warrant in connection with license agreement | — | 923 |
| Mark to Market revaluation of Series A Investor Right/Obligation | — | 500 |
| Changes in operating assets and liabilities: | | |
| Prepaid expenses and other current assets | 222 | (581) |
| Deferred issuance costs | — | (1,481) |
| Restricted cash | — | (225) |
| Accounts payable | (280) | 893 |
| Deferred grant income | — | 249 |
| Due to Motus Therapeutics, Inc. | — | 635 |
| Due from Rhythm Holding Company, LLC | — | (60) |
| Accrued expenses and other current liabilities | (1,023) | 2,945 |
| Net cash used in operating activities | (7,508) | (6,977) |
| **Investing activities** | | |
| Leasehold improvements in leased office space | — | (17) |
| Net cash used in investing activities | — | (17) |
| **Financing activities** | | |
| Net proceeds from issuance of Series A Convertible Preferred Stock | — | 39,617 |
| Equity contribution | 7,419 | 2,094 |
| Net cash provided by financing activities | 7,419 | 41,711 |
| Net increase (decrease) in cash and cash equivalents | (89) | 34,717 |
| Cash and cash equivalents at beginning of period | 241 | 152 |
| Cash and cash equivalents at end of period | $ 152 | $ 34,869 |

The accompanying notes are an integral part of these financial statements

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements**

**(In thousands, except share and per share information)**

## 1. Nature of Business

Rhythm Pharmaceuticals, Inc. (the "Company"), is a biopharmaceutical company focused on the development and commercialization of peptide therapeutics for the treatment of genetic deficiencies that result in metabolic disorders. The Company's lead product candidate is setmelanotide (RM-493), which is a potent, first-in-class, Phase 2 melanocortin-4, or MC4, receptor agonist for the treatment of rare genetic disorders of obesity caused by MC4 pathway deficiencies.

The Company initiated two Phase 2 clinical trials in patients with genetic deficiencies affecting the MC4 pathway during 2015, one for the treatment of obesity in patients with Prader-Willi Syndrome ("PWS"), and one for the treatment of pro-opiomelanocortin ("POMC") deficiency obesity.

***Corporate Reorganization***

The Company is a Delaware corporation organized in February 2013 under the name Rhythm Metabolic, Inc. Prior to the Company's organization and the Corporate Reorganization referred to below, the Company was part of Rhythm Pharmaceuticals, Inc. (the "Predecessor Company"), a Delaware corporation which was organized in November 2008 and which commenced active operations in 2010.

In March 2013, the Predecessor Company underwent a corporate reorganization, (the "Corporate Reorganization"), pursuant to which all of the outstanding equity securities of the Predecessor Company were exchanged for units of Rhythm Holding Company, LLC, a newly-organized limited liability company (the "LLC entity"). After the consummation of this exchange and as part of the Corporate Reorganization, the Predecessor Company contributed setmelanotide and the MC4R agonist program to the Company and distributed to the LLC entity all of the then issued and outstanding shares of the Company's stock. The result of the Corporate Reorganization was that the Company and the Predecessor Company became wholly-owned subsidiaries of the LLC entity and the two product candidates and related programs that were originally held by the Predecessor Company were separated, with relamorelin and the ghrelin agonist program being retained by the Predecessor Company and setmelanotide and the MC4R agonist program being held by the Company. The Predecessor Company, after consummation of the Corporate Reorganization, is referred to within these Notes to Financial Statements as the Relamorelin Company.

On October 13, 2015, the Relamorelin Company changed its name to Motus Therapeutics, Inc ("Motus") and the Company changed its name to Rhythm Pharmaceuticals, Inc.

***Liquidity***

The Company has incurred losses since inception and negative cash flows from operating activities. As of December 31, 2015, the Company had an accumulated deficit of $50,671. The Company anticipates that it will continue to incur significant operating losses for the next several years as it continues to develop setmelanotide. In the future, the Company will be dependent on obtaining funding from third parties, such as proceeds from the issuance of debt, sale of equity, and funded research and development programs, to maintain the Company's operations and meet the Company's obligations. There is no guarantee that additional equity or other financings will be available to the Company on acceptable terms, or at all. If the Company fails to obtain additional funding when needed, the Company would be forced to scale back, terminate its operations or seek to merge with or be acquired by another company. Management believes that the Company's existing cash resources will be sufficient to fund the Company's operating plan through at least the first half of 2017.

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

## 2. Summary of Significant Accounting Policies

***Basis of Presentation***

The Company's 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 Updates ("ASU") of the Financial Accounting Standards Board ("FASB").

The Company has historically existed and functioned as part of the consolidated businesses of the Predecessor Company. As noted above, the Predecessor Company's setmelanotide and the MC4R agonist program were transferred to the Company as part of the Corporate Reorganization on March 21, 2013. These financial statements include the results of operations of setmelanotide and the MC4R agonist program from its inception. As part of the Corporate Reorganization, the Company also entered into a formal payroll services intercompany agreement with the Relamorelin Company. At December 31, 2015, the Company had eight employees providing services to the Company under its payroll services agreement with the Relamorelin Company or directly employed by the Company. Costs have been allocated to the Company for the purposes of preparing the financial statements based on a specific identification basis or, when specific identification is not practicable, a proportional cost allocation method which allocates expenses based upon the percentage of employee time and research and development effort expended on the Company's business as compared to total employee time and research and development effort. The proportional use basis adopted to allocate shared costs is in accordance with the guidance of SEC Staff Accounting Bulletin ("SAB") Topic 1B, *Allocation Of Expenses And Related Disclosure In Financial Statements Of Subsidiaries, Divisions Or Lesser Business Components Of Another Entity*. Management has determined that the method of allocating costs to the Company is reasonable.

Management believes that the statements of operations include a reasonable allocation of costs and expenses incurred by the Relamorelin Company, which benefited the Company. However, such amounts may not be indicative of the actual level of costs and expenses that would have been incurred by the Company if it had operated as an independent company or of the costs and expenses expected to be incurred in the future. Management has not presented an estimate of what the expenses of the Company would have been on a standalone basis as it was not practicable to make a reasonable estimate. As such, the financial information herein may not necessarily reflect the financial position, results of operations and cash flows of the Company expected in the future or what it would have been had it been an independent company during the periods presented.

As described above, Relamorelin Company employee costs are allocated to the Company. For those employees who are anticipated to become employees of the Company in the future, their full employment cost was $2,255, and $3,155 for the years ended December 31, 2014 and December 31, 2015, respectively.

On August 3, 2015, the Company's board of directors approved a 93,500-for-1 forward stock split of the Company's issued and outstanding shares of common stock. All share and per share amounts in the financial statements have been retrospectively adjusted for all periods presented to give effect of the forward stock split.

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**2. Summary of Significant Accounting Policies (Continued)**

***Use of Estimates***

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. The Company bases its estimates on historical experience and other market-specific or other relevant assumptions that it believes to be reasonable under the circumstances. This process may result in actual results differing materially from those estimated amounts used in the preparation of the financial statements if these results differ from historical experience, or other assumptions do not turn out to be substantially accurate, even if such assumptions are reasonable when made. Significant estimates relied upon in preparing these financial statements include the allocation of costs from the Relamorelin Company in accordance with SAB Topic 1B, accrued expenses, stock-based compensation expense, the valuation allowance on the Company's deferred tax assets, and the fair value of the Series A Investor Right/Obligation and the Series A Investor Call Option. See Note 4.

**Unaudited Pro Forma Financial Information**

The unaudited pro forma balance sheet and statement of convertible preferred stock and stockholders' equity (deficit) as of December 31, 2015 reflect the conversion of all the outstanding shares of Series A Convertible Preferred Stock into shares of Common Stock.

Unaudited pro forma net loss per share attributable to common stockholders is computed using the weighted-average number of common shares outstanding after giving effect to the conversion of all Preferred Stock into shares of the Common Stock as if such conversion had occurred at the beginning of the period presented, or the date of original issuance, if later. Accordingly, the pro forma basic and diluted net loss per share attributable to common stockholders does not include the effects of the cumulative Preferred Stock dividends.

***Off-Balance Sheet Risk and Concentrations of Credit Risk***

Financial instruments, which potentially subject the Company to significant concentration of credit risk, consist primarily of cash and cash equivalents, which are maintained at two federally insured financial institutions. The deposits held at these two institutions are in excess of federally insured limits. The Company has not experienced any losses in such accounts and management believes that the Company is not exposed to significant credit risk due to the financial position of the depository institutions in which those deposits are held. The Company has no off-balance sheet risk, such as foreign exchange contracts, option contracts, or other foreign hedging arrangements.

***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 views its operations and manages its business in one operating segment operating exclusively in the United States.

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**2. Summary of Significant Accounting Policies (Continued)**

***Cash and Cash Equivalents***

The Company considers all highly liquid investments with original or remaining maturity from the date of purchase of three months or less to be cash equivalents. Cash and cash equivalents includes bank demand deposits, U.S. treasury bills and money market funds that invest primarily in U.S. government treasuries.

***Restricted Cash***

Restricted cash consists of a security deposit in the form of a letter of credit placed in a separate restricted bank account as required under the terms of the Company's new lease arrangement for its corporate office in Boston, Massachusetts. There was no restricted cash as of December 31, 2014 and the balance as of December 31, 2015 was $225.

***Deferred Issuance Costs***

Deferred issuance costs, which consist of direct incremental legal and accounting fees relating to the potential initial public offering ("IPO"), are capitalized. The deferred issuance costs will be offset against IPO proceeds upon the consummation of the offering. In the event the offering is terminated, deferred issuance costs will be expensed. No amounts were capitalized as of December 31, 2014, and $1,481 was capitalized at December 31, 2015 and is included in non-current assets.

***Prepaid Expenses and Other Current Assets***

Prepaid expenses and other current assets consist primarily of costs incurred in advance of services being received, including services related to clinical trial programs.

| | Year ended December 31, | |
|---|---|---|
| | 2014 | 2015 |
| Prepaid research and development costs | $ — | $ 595 |
| Other current assets | 42 | 28 |
| Prepaid expenses and other current assets | $ 42 | $ 623 |

***Construction in Progress***

Construction in progress consists of the following:

| | Year ended December 31, | |
|---|---|---|
| | 2014 | 2015 |
| Leasehold improvements | $ — | $ 17 |
| Less accumulated depreciation and amortization | — | — |
| Construction in progress | $ — | $ 17 |

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**2. Summary of Significant Accounting Policies (Continued)**

Leasehold improvements made during the year ended December 31, 2015 represent costs related to the Company's newly leased office space in Boston, Massachusetts. The asset will be transferred into service in 2016 and amortized over the shorter of the lease term or their expected useful life.

***Series A Investor Right/Obligation and Series A Investor Call Option***

The Company classified its Series A Investor Right/Obligation and its Series A Investor Call Option (see Note 4) as liabilities as they are free-standing financial instruments. The Series A Investor Right/Obligation and the Series A Investor Call Option were recorded at fair value upon the issuance of Series A Convertible Preferred Stock in August 2015 and subsequently remeasured to fair value. Changes in fair value of the Series A Investor Right/Obligation and the Series A Investor Call Option are recognized as a component of other income (expense), net in the Statement of Operations and Comprehensive Loss. The Series A Investor Right/Obligation was exercised and the Series A Investor Call Option expired on December 1, 2015 upon the Series A Second Tranche Closing.

The Company used the Black-Scholes option-pricing model, which incorporates assumptions and estimates, to value the Series A Investor Call Option. The Company assessed these assumptions and estimates on a quarterly basis as additional information impacting the assumptions was obtained. Estimates and assumptions impacting the fair value measurement include the fair value per share of the underlying Series A Convertible Preferred Stock, the expected term of the Series A Investor Call Option, risk-free interest rate, expected dividend yield and expected volatility of the price of the underlying preferred stock. The Company determined the fair value per share of the underlying preferred stock by taking into consideration the most recent sale of its convertible preferred stock and the investors' right to invest in a subsequent tranche. The Company's history as a private company means that it lacks company-specific historical and implied volatility information of its stock. Therefore, it estimates its expected stock volatility based on the historical volatility of publicly traded peer companies for a term comparable to the estimated term of the Series A Investor Call Option. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve for time periods approximately equal to the estimated term of the Series A Investor Call Option. A dividend yield of zero is assumed.

The Company estimated the fair value of the Series A Investor Right/Obligation as the probability-weighted present value of the expected benefit of the investment (see Note 5).

***Government Grants***

The Company obtained an Orphan Products Development ("OPD") grant entitled "Phase 2 study of the melamocortin 4 receptor agonist RM-493 for the treatment of Prader-Willi syndrome" in 36 patients. The grant was awarded by the Public Health Service ("PHS") Food and Drug Administration. The PHS grant is for a total of $999 and is effective July 2015 through June 2018 for reimbursement of expenses relating to the Phase 2 Prader-Willi Study.

The Company recognizes government grants upon the determination that it will comply with the conditions attached to the grant arrangement and the grant will be received. Government grants are recognized in the statements of operations on a systematic basis over the periods in which the Company recognizes the related costs for which the government grant is intended to compensate. Government grants for research and development efforts are deducted in reporting the related expense in the statement of

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**2. Summary of Significant Accounting Policies (Continued)**

operations. Government grant income received during 2015 of $147 is included as a deduction to research and development expense in the statements of operations and $249 is included as deferred grant income as of December 31, 2015.

***Research and Development Expenses***

Costs incurred in the research and development of the Company's products are expensed to operations as incurred. Research and development expenses consist of costs incurred in performing research and development activities, including salaries and benefits, facilities costs, overhead costs, contract services and other outside costs, both directly incurred and allocated from the Relamorelin Company. The value of goods and services received from contract research organizations or contract manufacturing organizations in the reporting period are estimated based on the level of services performed and progress in the period for which the Company has not yet received an invoice from the supplier.

Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses, and expensed as the related goods are delivered or the services are performed.

***Income Taxes***

The Company is taxed as a C corporation for federal income tax purposes. Income taxes for the Company are recorded in accordance with FASB ASC Topic 740, *Income Taxes* ("ASC 740"), which provides for deferred taxes using an asset and liability approach. Income taxes have been calculated on a separate tax return basis. Certain of the Company's activities and costs have been included in the tax returns filed by the Relamorelin Company and the LLC entity. Prior to the Corporate Reorganization, the Company's operations were included in the tax returns filed by the Predecessor Company. The Company filed tax returns on its own behalf since the Corporate Reorganization. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. Tax benefits are recognized when it is more likely than not that a tax position will be sustained during an audit. Deferred tax assets are reduced by a valuation allowance if current evidence indicates that it is considered more likely than not that these benefits will not be realized.

***Net Loss Per Share Attributable to Common Shareholders***

Basic net loss per share attributable to common stockholders is calculated by dividing net loss attributable to common stockholders by the weighted average shares outstanding during the period, without consideration for Common Stock equivalents. Net loss attributable to common stockholders is calculated by adjusting the net loss of the Company for cumulative preferred stock dividends. During periods of income, the Company allocates participating securities a proportional share of income determined by dividing total weighted average participating securities by the sum of the total weighted average common shares and participating securities (the "two class method"). The Company's convertible preferred stock participates in any dividends declared by the Company and are therefore considered to be participating securities. Participating securities have the effect of diluting both basic and diluted earnings per share during periods of income. During periods of loss, the Company allocates no loss to participating

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**2. Summary of Significant Accounting Policies (Continued)**

securities because they have no contractual obligation to share in the losses of the Company. Diluted net loss per share attributable to common stockholders is calculated by adjusting weighted average shares outstanding for the dilutive effect of Common Stock equivalents outstanding for the period, determined using the treasury-stock and if-converted methods. For purposes of the diluted net loss per share attributable to common stockholders calculation, convertible preferred stock and stock options are considered to be Common Stock equivalents but have been excluded from the calculation of diluted net loss per share attributable to common stockholders, as their effect would be anti-dilutive for all periods presented. Therefore, basic and diluted net loss per share were the same for all periods presented.

As the year ended December 31, 2014 and 2015 resulted in net losses, there is no income allocation required under the two-class method or dilution attributed to pro forma weighted average shares outstanding in the calculation of pro forma diluted loss per share attributable to common stockholders. The unaudited pro forma information reflects the automatic conversion, at the closing of a qualified public offering, of the Company's Preferred Stock into shares of Common Stock.

Basic and diluted earnings per share is calculated as follows:

| | Year Ended December 31, | |
|---|---|---|
| | 2014 | 2015 |
| Numerator: | | |
| Net loss | $ (6,493) | $ (11,073) |
| Cumulative dividends on convertible preferred shares | — | (927) |
| Loss attributable to common shares—basic and diluted | $ (6,493) | $ (12,000) |
| Denominator: | | |
| Weighted-average number of common shares—basic and diluted | 93,500,000 | 93,500,000 |
| Loss per common share—basic and diluted | $ (0.07) | $ (0.13) |

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**2. Summary of Significant Accounting Policies (Continued)**

Pro forma earnings per share is computed as follows:

| | Year Ended December 31, 2015 |
|---|---|
| ***Numerator:*** | |
| Net loss attributable to common shares—basic and diluted | $ (11,073) |
| Add: Cumulative dividends on convertible preferred shares | — |
| Net loss attributable to common stockholders—basic and diluted | $ (11,073) |
| ***Denominator:*** | |
| Weighted average common shares outstanding—basic and diluted | 93,500,000 |
| Add: Assumed conversion of convertible preferred stock to common stock | 11,538,462 |
| Pro forma weighted-average shares outstanding | 105,038,462 |
| Pro forma net loss per share—basic and diluted | $ (0.11) |

***Patent Costs***

Costs to secure and defend patents are expensed as incurred and are classified as general and administrative expenses. Patent costs were $142 and $280 for the years ended December 31, 2014 and 2015, respectively.

**Application of New or Revised Accounting Standards**

From time to time, new accounting pronouncements are issued by the FASB and adopted by the Company as of the specified effective date. Unless otherwise discussed, the Company believes that the impact of recently issued standards that are not yet effective will not have a material impact on its financial position or results of operations upon adoption.

In April 2012, the Jump-Start Our Business Startups Act (the "JOBS Act") was signed into law. The JOBS Act contains provisions that, among other things, reduce certain reporting requirements for an "emerging growth company." As an emerging growth company, the Company elected to not take advantage of the extended transition period afforded by the JOBS Act for the implementation of new or revised accounting standards, and as a result, will comply with new or revised accounting standards on the relevant dates on which adoption of such standards is required for non-emerging growth companies.

In August 2014, the FASB issued ASU No. 2014-15, Presentation of Financial Statements—Going Concern ("ASU No. 2014-15"). The new guidance addresses management's responsibility to evaluate whether there is substantial doubt about an entity's ability to continue as a going concern and to provide related footnote disclosures. Management's evaluation should be based on relevant conditions and events that are known and reasonably knowable at the date that the financial statements are issued. The standard will be effective for the first interim period within annual reporting periods beginning after December 15, 2016. Early adoption is permitted. The Company does not expect the new guidance to have a significant

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**2. Summary of Significant Accounting Policies (Continued)**

effect on its financial statements, but may require further disclosure in its financial statements once adopted.

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842). ASU 2016-02 requires lessees to recognize lease assets and lease liabilities for those leases classified as operating leases under previous GAAP. A lessee should recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. For leases with a term of 12 months or less, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize lease assets and lease liabilities. The recognition, measurement, and presentation of expenses and cash flows arising from a lease by a lessee have not significantly changed from previous GAAP. There continues to be a differentiation between finance leases and operating leases. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years, and early adoption is permitted. The Company is currently in the process of evaluating the impact of adoption of ASU No. 2016-02 on its financial position and results of operations.

***Subsequent Events***

The Company considers events or transactions that occur after the balance sheet date but prior to the issuance of the financial statements to provide additional evidence for certain estimates or to identify matters that require additional disclosure. Subsequent events have been evaluated as required. See Note 12.

**3. Accrued Expenses**

Accrued expenses consisted of the following:

| | Year ended December 31, | |
|---|---|---|
| | 2014 | 2015 |
| Professional fees | $ — | $ 1,920 |
| Research and development costs | 17 | 998 |
| Other | — | 44 |
| Accrued expenses | $ 17 | $ 2,962 |

**4. Preferred Stock**

In August 2015, pursuant to the Series A Preferred Stock Purchase Agreement, by and among the Company and certain purchasers, and as part of an initial tranche closing, the Company issued 25,000,000 shares of Series A Convertible Preferred Stock, par value $0.001 per share, at a purchase price of $1.00 per share, resulting in net proceeds of $24,976 to the Company (the "August 2015 Initial Closing"). The Series A Preferred Stock Purchase Agreement provided for the delayed issuance of up to an additional 15,000,000 shares of Series A Convertible Preferred Stock as part of a Second Tranche Closing. The delayed issuance will automatically be settled upon the achievement of a specific milestone, resulting in the issuance of shares of Series A Convertible Preferred Stock (the "Series A Investor Right/Obligation"). The

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**4. Preferred Stock (Continued)**

Series A Investor Call Option becomes exercisable in the event that a Second Tranche Closing has not been consummated. Both the Series A Investor Right/Obligation and the Series A Investor Call Option have been evaluated and determined to be free standing instruments and are being accounted as liabilities (see Note 2). In December 2015, the specific milestones were met and 15,000,000 shares of Series A Convertible Preferred Stock were issued at a purchase price of $1.00 per share for net proceeds of $14,641. The Series A Investor Call Option expired unexercised at that time.

Upon the closing of an initial public offering with a minimum price per share and gross proceeds of at least $1.00 and $50 million, respectively, the Series A Convertible Preferred Stock will automatically convert into shares of Common Stock on a one-for-one basis.

The holders of the Series A Convertible Preferred Stock have the following rights and preferences:

***Voting Rights***

The holders of Series A Convertible Preferred Stock are entitled to vote, together with the holders of Common Stock, on all matters submitted to stockholders for a vote. Each preferred stockholder is entitled to the number of votes equal to the number of shares of Common Stock into which each preferred share is convertible at the time of such vote. In addition, pursuant to the Company's charter, the holders of record of the outstanding shares of Series A Convertible Preferred Stock are entitled to elect one director to serve as the Series A Preferred Director on the board of directors of the Company.

***Dividends***

The holders of Series A Convertible Preferred Stock are entitled to receive dividends in preference to any dividend on Common Stock at the rate of 8.0% per year of the original issue price. Dividends shall accrue annually, whether or not declared, and shall be cumulative. The Company may not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Company unless the holders of Series A Convertible Preferred Stock then outstanding shall first receive, or simultaneously receive, dividends on each outstanding share of Series A Convertible Preferred Stock. Through December 31, 2015, no dividends had been declared or paid by the Company. Accrued dividends, whether or not declared, shall also be payable upon any liquidation event. At December 31, 2015, cumulative preference dividends amounted to $927, or $0.01 per share.

***Liquidation***

In the event of any liquidation, dissolution or winding-up of the Company, the holders of Series A Convertible Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Company available for distribution to stockholders, and before any payment shall be made to holders of Common Stock, an amount per share equal to greater of (i) the original issue price per share, plus any accrued but unpaid dividends thereon, whether or not declared, plus any declared but unpaid dividends thereon, if any, or (ii) such amount per share as would have been payable had all shares of Series A Convertible Preferred Stock been converted to Common Stock prior to such liquidation. If upon such event, the assets of the Company available for distribution are insufficient to permit payment in full to the holders of Series A Convertible Preferred Stock, the proceeds will be ratably distributed among the holders of Series A Convertible Preferred Stock in proportion to the respective amounts that they would have received if they

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**4. Preferred Stock (Continued)**

were paid in full. After payments have been made in full to the holders of Series A Convertible Preferred Stock, the remaining assets of the Company available for distribution will be distributed among the holders of Series A Convertible Preferred Stock and the holders of Common Stock as if the shares of Series A Convertible Preferred Stock were converted to Common Stock immediately prior to the liquidation event.

A merger, acquisition, sale of voting control or other transaction of the Company in which the stockholders of the Company do not own a majority of the outstanding shares of the surviving company shall be deemed to be a liquidation event. A sale, exclusive license, transfer or other disposition of all or substantially all of the assets of the Company shall also be deemed a liquidation event. Each share of Series A Convertible Preferred Stock may be redeemed at the option of the holder upon the occurrence of a deemed liquidation event. As of December 31, 2015, the liquidation preference of the outstanding shares of Series A Convertible Preferred Stock was approximately $40,927.

***Conversion***

Each share of Series A Convertible Preferred Stock is convertible into common stock at the option of the stockholder at any time after the date of issuance. In addition, each share of Series A Convertible Preferred Stock will be automatically converted into shares of common stock, at the applicable conversion ratio then in effect, upon the earlier of (i) a qualified public offering with gross proceeds of at least $50,000 and a price of not less than $1.00 per share, subject to appropriate adjustment for any stock dividend, stock split, combination or other similar recapitalization, and (ii) the date specified by vote or written consent of the holders of at least two-thirds of the then outstanding shares of series A preferred stock. The shares of Series A Convertible Preferred Stock will be converted to common stock, at par value, with the remainder recorded to additional paid-in capital.

The conversion ratio of the Series A Convertible Preferred Stock is determined by dividing the original issue price per share by the conversion price of $1.00 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or recapitalization affecting the Series A Convertible Preferred Stock. As of December 31, 2015, the outstanding shares of Series A Convertible Preferred Stock were convertible into 40,000,000 shares of common stock.

**5. Fair Value of Financial Assets and Liability**

As of December 31, 2014 and 2015 the carrying amount of cash and cash equivalents was $152 and $34,869, respectively, which approximates fair value. Cash and cash equivalents includes investments in money market funds that invest in U.S. government securities that are valued using quoted market prices. Accordingly, money market funds and government funds are categorized as Level 1 and had a total balance of $0 and $11,972 as of December 31, 2014 and 2015, respectively.

For the years ended December 31, 2014 and 2015, the Company had no financial liabilities outstanding measured at fair value. The Company recognized a financial liability during 2015 related to its Series A Investor Right/Obligation and Series A Investor Call Option that was exercised or expired, respectively, in December 2015. The liability was based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy.

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**5. Fair Value of Financial Assets and Liability (Continued)**

The following tables present information about the Company's financial assets and liabilities measured at fair value on a recurring basis and indicate the level of the fair value hierarchy utilized to determine such fair values:

| | Fair Value Measurements as of December 31, 2015 Using: | | | |
|---|---|---|---|---|
| | Level 1 | Level 2 | Level 3 | Total |
| Assets: | | | | |
| Money Market and Government Funds | $ 11,972 | $ — | $ — | $ 11,972 |
| Liabilities: | | | | |
| Series A Investor Right/Obligation and Series A Investor Call Option | $ — | $ — | $ — | $ — |
| Total | $ 11,972 | $ — | $ — | $ 11,972 |

Below is a roll forward of the Company's fair value of financial liabilities for the year ended December 31, 2015:

| | Series A Investor Right/Obligation And Series A Investor Call Option |
|---|---|
| Fair value at December 31, 2014 | $ — |
| Fair value upon the August 2015 Initial Closing | $ 500 |
| Change in fair value through the date of settlement | 500 |
| Reclassification of liability upon December 2015 Second Tranche closing | (1,000) |
| Fair value at December 31, 2015 | $ — |

The following assumptions and inputs were used in determining the fair value of the Series A Investor Call Option valued using the Black-Scholes option pricing model:

| | August 2015 Initial Tranche Closing |
|---|---|
| Series A Convertible Preferred Stock Exercise Price | $ 1.00 |
| Series A Convertible Preferred Stock Fair Value | $ 0.81 |
| Expected term | 2 months |
| Expected volatility | 24.0% |
| Expected interest rate | 0.08% |
| Expected dividend yield | — |

The Series A Investor Call Option expired upon the Second Tranche Closing in December 2015.

The Company estimated the fair value of the Series A Investor Right/Obligation as the probability-weighted present value of the expected benefit of the investment. The expected benefit is the difference between the expected future value of shares issued upon the second tranche closing and the investment price for the second tranche closing. The expected future value as of the August 2015 Initial Tranche

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**5. Fair Value of Financial Assets and Liability (Continued)**

Closing was estimated through a backsolve calculation which assumes a 70 percent probability of closing, a discount rate of 0.08% and a second tranche closing date of November 30, 2015.

The Company performed a contemporaneous valuation of the Series A Investor Right/Obligation to invest in the second tranche of our series A preferred stock financing. This valuation coincided with the Series A Second Tranche Closing on December 1, 2015. The Company valued the Series A Investor Right/Obligation as the benefit associated with the second tranche investment. The benefit is a function of the difference between the fair value of the series A shares and the Series A Investor Right/Obligation exercise price on the date of closing and the number of shares acquired. The Company estimated the fair value of the Series A Investor Right/Obligation as the probability weighted average of two scenarios: an IPO and a remain-private scenario.

**6. Common Stock**

In March 2013, the Company issued 93,500,000 shares of common stock at a purchase price of $0.001 per share. As of December 31, 2014 and December 31, 2015, the LLC entity owned all of these shares.

In August 2015, the Company's board of directors approved a 93,500-for-one forward stock split of the Company's issued and outstanding shares of common stock. All shares and per share amounts in the financial statements have been retrospectively adjusted for all periods presented to give effect of the forward stock split. The Company filed an amended and restated certificate of incorporation with the Secretary of State of the State of Delaware to increase its authorized number of shares of common stock to 150,000,000 shares of common stock, $0.001 par value per share, 93,500,000 shares of which were issued and outstanding as of December 31, 2015. The Company has reserved 16,500,000 shares of common stock for issuance to officers, directors, employees and consultants of the Company pursuant to the 2015 Stock Incentive Plan (the "Plan") duly adopted by the Company's Board of Directors and approved by the Company's stockholders. Of such reserved shares of common stock, no shares have been issued pursuant to restricted stock purchase agreements, 8,254,519 options to purchase shares of common stock have been granted, and 8,245,481 shares of common stock remain available for issuance to officers, directors, employees and consultants pursuant to the Plan.

**7. Stock-based Compensation**

**2015 Stock Incentive Plan**

***2015 PlanOverview***

In August 2015, the Company's Board of Directors approved the plan which provides for the grant of incentive and non-qualified stock options and restricted stock awards to employees, consultants, advisors and directors, as determined by the Board of Directors. The Company reserved 16,500,000 shares of common stock. Shares of common stock issued upon exercise of stock options are generally issued from new shares of the Company. The Plan provides that the exercise price of incentive stock options cannot be less than 100% of the fair market value of the common stock on the date of the award for participants who own less than 10% of the total combined voting power of stock of the Company, and not less than 110% for participants who own more than 10% of the Company's voting power. Options and restricted stock granted under the Plan will vest over periods as determined by the Company's Board of Directors. For

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**7. Stock-based Compensation (Continued)**

options granted to date, the exercise price equaled the fair value of the common stock as determined by the Board of Directors on the date of grant.

The Company estimates the fair value of stock-based awards to employees and non-employees using the Black-Scholes option-pricing model, which requires the input of highly subjective assumptions, including (a) the expected volatility of the underlying common stock, (b) the expected term of the award, (c) the risk-free interest rate, and (d) expected dividends. Due to the lack of a public market for the trading of its common stock and a lack of company-specific historical and implied volatility data, the Company based its estimate of expected volatility on the historical volatility of a group of companies in the pharmaceutical and biotechnology industries in a similar stage of development as the Company that are publicly traded. For these analyses, the Company selected companies with comparable characteristics to its own including enterprise value, risk profiles and with historical share price information sufficient to meet the expected life of the stock-based awards. The Company computes the historical volatility data using the daily closing prices for the selected companies' shares during the equivalent period of the calculated expected term of its stock-based awards. The Company will continue to apply this process until a sufficient amount of historical information regarding the volatility of its own stock price becomes available. The Company estimated the expected life of its employee stock options using the "simplified" method, whereby, the expected life equals the average of the vesting term and the original contractual term of the option. The risk-free interest rates for periods within the expected life of the option are based on the U.S. Treasury yield curve in effect during the period the options were granted.

The Company is also required to estimate forfeitures at the time of grant, and revise those estimates in subsequent periods if actual forfeitures differ from estimates. The Company used historical data to estimate pre-vesting option forfeitures and record stock-based compensation expense only for those awards that are expected to vest. To the extent that actual forfeitures differ from its estimates, the difference is recorded as a cumulative adjustment in the period the estimates were revised. Stock-based compensation expense recognized in the financial statements is based on awards that are ultimately expected to vest.

The grant date fair value of awards subject to service-based vesting, net of estimated forfeitures, is recognized ratably over the requisite service period, which is generally the vesting period of the respective awards. The Company's stock option awards typically vest over a service period that ranges from three to four years and includes awards with one year cliff vesting followed by ratable monthly vesting thereafter and ratable monthly vesting beginning on the grant date.

The unvested portion of stock options granted to non-employees are subject to remeasurement at subsequent reporting periods.

***2015 Activity***

During 2015, the Company granted 8,254,519 common stock option awards to certain of its employees and non-employees. Of the awards granted, 6,011,844 were to Motus employees providing service to the Company through a service arrangement (See Note 2). As Motus and the Company are under the common control of the LLC entity, the awards are treated as a dividend to the LLC entity for the Company's standalone financial reporting in accordance with ASC 718, Compensation—Stock Compensation. The grante date fair value of $2,695 for the grants was established using a Black-Scholes model with

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**7. Stock-based Compensation (Continued)**

assumptions consistent with ASC 505-50, Equity-Based Payments to Non-employees and was recorded as a dividend with a corresponding credit to Additional Paid-in Capital. As Motus is recognizing these grants to its employees as compensation expense on a fair value basis in accordance with ASC 815, Derivatives and Hedging, the Company is recognizing its proportionate share of the compensation expense recognized by Motus consistent with its accounting policy described in Note 2.

The fair value of share options granted to employees and directors during the year ended December 31, 2015 was estimated using the Black-Scholes option pricing model with the following weighted-average assumptions:

| | Year Ended December 31, 2015 |
|---|---|
| Risk-free interest rate | 1.84% |
| Expected term (in years) | 5.93 |
| Expected volatility | 66.5% |
| Expected dividend yield | — |

The fair value of share options granted to non-employees during the year ended December 31, 2015 was estimated using the Black-Scholes option pricing model with the following weighted-average assumptions:

| | Year Ended December 31, 2015 |
|---|---|
| Risk-free interest rate | 2.25% |
| Expected term (in years) | 10.0 |
| Expected volatility | 75.7% |
| Expected dividend yield | — |

A summary of the Company's common stock option activity for the year ended December 31, 2015 is as follows:

| | Number of Units | Weighted-Average Grant Date Fair Value Per Unit | Weighted Average Exercise Price | Weighted-Average Remaining Contractual Term |
|---|---|---|---|---|
| Outstanding as of December 31, 2014 | — | $ — | $ — | — |
| Granted | 8,254,519 | 0.41 | 0.55 | |
| Exercised | — | — | — | — |
| Cancelled | — | — | — | — |
| Outstanding as of December 31, 2015 | 8,254,519 | 0.41 | 0.55 | 9.90 |
| Options vested and expected to vest as of December 31, 2015 | 8,254,519 | $ 0.41 | $ 0.55 | 9.90 |
| Options exercisable at December 31, 2015 | 647,346 | $ 0.45 | $ 0.56 | 9.91 |

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**7. Stock-based Compensation (Continued)**

Under the Plan, the Company recorded stock-based compensation of $192 during the year ended December 31, 2105, that consists of stock-based compensation expense for stock options granted to employees, and Company directors of $39 and stock options granted to employees of the Motus entity that are allocated to the Company of $153. As of December 31, 2015, the Company has unrecognized compensation cost of $717 related to non-vested employee and director awards that is expected to be recognized over a weighted-average period of 3.34 years. As of December 31, 2015, the Company has unrecognized compensation cost of $3,662 related to non-vested Motus entity awards that is expected to be recognized over a weighted-average period of 3.59 years and the Company will be allocated its share of expense from Motus in accordance with the policy described in Note 2.

The following table summarizes the classification of the Company's stock-based compensation expenses related to the Plan recognized in the Company's statements of operations and comprehensive loss.

| | Year Ended December 31, 2015 |
|---|---|
| Research and development | $ 68 |
| General and administrative | 124 |
| Total | $ 192 |

The Company did not grant any stock options to non-employees during the year ended December 31, 2014.

**LLC Incentive Plan**

The Company was allocated stock compensation expense from the LLC entity's plan using the same proportional use basis for other shared costs (see Note 2). The following table summarizes the classification of the Company's stock-based compensation expenses related to the costs allocated from the LLC's Plan recognized in the Company's statements of operations and comprehensive loss.

| | Year Ended December 31, | |
|---|---|---|
| | 2014 | 2015 |
| Research and development | $ 23 | $ 76 |
| General and administrative | 43 | 30 |
| Total | $ 66 | $ 106 |

The remainder of this Note discloses the stock-based compensation activity of the Predecessor Company and the LLC entity.

**Original Plan**

The Predecessor Company had one stock based compensation plan—the 2010 equity incentive plan, as amended (the "Original Plan"). The Original Plan previously provided for the grant of incentive and

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**7. Stock-based Compensation (Continued)**

non-qualified stock options and restricted stock grants to employees, consultants, advisors and directors, as determined by the board of directors of the Predecessor Company.

As a result of the Corporate Reorganization, all outstanding option grants under the Original Plan were cancelled. Each holder of a stock option that was cancelled was issued a restricted common unit of the LLC entity in its place on a one-for-one basis. Restricted common unit vesting agreements were contracted between the LLC entity and the restricted common unit holder granting the holder the same vesting terms as originally granted in the respective option agreement. Any unvested portion of the stock option at the Corporate Reorganization would continue to vest under those original time frames and conditions. Exercise prices were eliminated as they are not applicable to common unit instruments, and all equity incentive grants after the Corporate Reorganization were of restricted common units.

The holder of a restricted common unit is entitled to one vote per unit. After the payment of all preferential amounts to the holders of the convertible preferred units, the holder of a restricted common unit is entitled to his pro rata share of the remaining consideration, if any, based on the number of restricted common units held by the holder.

***Restricted Common Units***

Upon the Corporate Reorganization, all 615,685 common stock options of the Predecessor Company under the Original Plan outstanding as of March 21, 2013 were exchanged on a one-for-one basis for 615,685 restricted common units of the LLC entity. Vesting continued on the same schedule as originally granted per the respective option agreement. At the time of the exchange, the LLC entity determined the fair value of a restricted common unit to be $1.21 per unit, equivalent to the fair value of a common unit. The fair value of stock options immediately prior to the Corporate Reorganization was determined using a Black-Scholes option pricing model and ranged in value from $0.48 to $0.64. The exchange was accounted for by the LLC entity as a modification in accordance with ASC 718, with the incremental fair value determined to be $255, of which $99 was recognized immediately upon the Corporate Reorganization for the portion related to the vested awards, and the remaining $156 will be recognized over the remaining service period of the restricted common units, net of estimated forfeitures. No common stock options were issued by the Relamorelin Company under the Original Plan subsequent to the Corporate Reorganization.

All restricted common units granted subsequent to the Corporate Reorganization were valued at the fair value of the LLC entity's common unit on the date of grant and will be expensed over their respective service period. Forfeitures are required to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The term "forfeitures" is distinct from "cancellations" and represents only the unvested portion of the surrendered unit. Ultimately, the actual expense recognized over the vesting period will only be for those options that vest.

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**7. Stock-based Compensation (Continued)**

A summary of the LLC entity's restricted common unit activity for the year ended December 31, 2015 is as follows:

| | Number of Units | Weighted-Average Grant Date Fair Value Per Unit |
|---|---|---|
| Outstanding unvested as of December 31, 2014 | 165,061 | $ 1.21 |
| Granted | 120,490 | 5.24 |
| Vested | (140,138) | 2.20 |
| Cancelled | — | — |
| Outstanding unvested as of December 31, 2015 | 145,413 | $ 3.59 |

The LLC entity recorded total stock-based compensation expense for stock options and restricted common units granted to employees, directors and non-employees of $161 and $337 during the years ended December 31, 2014 and 2015, respectively. The total fair value of stock options vested during the years ended December 31, 2014 and 2015 was $147 and $309, respectively. As of December 31, 2014 and December 31, 2015, unrecognized compensation cost of $199 and $516, respectively, related to non-vested employee stock-based compensation arrangements is expected to be recognized over weighted-average periods of 0.6 and 1.4 years, respectively.

***Restricted Common Unit Grants to Non-Employees***

During the years ended December 31, 2014 and December 31, 2015, subsequent to the Corporate Reorganization, the LLC entity granted restricted common units to non-employee consultants. The LLC entity valued these restricted common units based on their fair value on the date of grant, determined to be the fair value of a common unit.

The unvested restricted common units held by consultants have been and will be remeasured using the LLC entity's estimate of fair value at each reporting period through the remaining vesting period. Stock-based compensation expense of $17 and $47 was recorded for the years ended December 31, 2014 and 2015, respectively, relating to non-employee and option awards.

**8. Significant Agreements**

***License Agreements***

The Predecessor Company entered into a license agreement on February 26, 2010 with Ipsen Pharma, S.A.S. ("Ipsen") that granted full worldwide right for two programs that include the clinical candidates setmelanotide, which is in Phase 2 clinical trials, and relamorelin, which is in Phase 2 clinical trials. As a result of the Corporate Reorganization described in Note 1, the Ipsen license was converted to separate license agreements for the setmelanotide program held by the Company and the relamorelin program held by the Relamorelin Company, respectively. Under the terms of the setmelanotide Ipsen license agreement, assuming that setmelanotide is successfully developed, receives regulatory approval and is commercialized, Ipsen may receive aggregate payments of up to $40,000 upon the achievement of certain development and commercial milestones and royalties on future product sales in the mid-single digits.

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**8. Significant Agreements (Continued)**

Substantially all of such aggregate payments of up to $40,000 are for milestones that may be achieved no earlier than first commercial sale of setmelanotide. In the event that the Company executes a sublicense agreement, it shall make payments to Ipsen, depending on the date of such sublicense agreement, ranging from 10% to 20% of all revenues actually received under such sublicense agreement.

In connection with this license agreement, the LLC entity issued two warrants in March 2010 to an affiliate of Ipsen to purchase a total of 489,500 common units. These warrants were vested in full in 2010 and 2011, respectively. In July 2015, the warrant agreement was amended to extend the expiration date to July 31, 2015 as the original warrant agreement expired in March 2015. In July 2015, an affiliate of Ipsen elected to exercise these warrants in full for a total of 489,500 common units of the LLC entity. In July 2015, upon exercise, warrant expense of $923 was allocated to the Company relating to the modification of these warrants and is included within research and development expense.

**9. Commitments and Contingencies**

The Company is not a party to the lease for the facility it currently shares with the Relamorelin Company. In November 2015, the Company entered into a Lease Agreement for an office facility at 500 Boylston Street, Boston, Massachusetts. The lease term is expected to commence in April 2016 and has a term of 5 years with a five year renewal option to extend the lease.

Future minimum payments under the operating lease agreements as of December 31, 2015, are as follows:

| | |
|---|---|
| 2016 | $ 215 |
| 2017 | 292 |
| 2018 | 299 |
| 2019 | 306 |
| 2020 | 312 |
| Thereafter | 79 |
| Total | $ 1,503 |

**10. Related-Party Transactions**

The Company shares costs with the Relamorelin Company, its affiliate, including payroll, facilities, information technology and other research and development and general and administrative overhead costs. Additionally, the Relamorelin Company has paid certain Company expenses directly on behalf of the Company. Shared costs incurred by the Relamorelin Company and Company expenses paid by the Relamorelin Company on behalf of the Company are allocated from the Relamorelin Company to the Company as described in Note 1 and Note 2. These costs totaled $1,765, and $2,149 for the years ended December 31, 2014 and 2015, respectively. From August 1, 2015, Company expenses paid by the Relamorelin Company on behalf of the Company amounted to $1,416 of which $781 were repaid by the Company and $635 were recorded as a liability within Due to Motus on the balance sheet. Prior to August 1, 2015, these amounts were recorded by the Company within Additional Paid-in Capital as capital contributions from the LLC entity as such amounts are not repayable from the Company to the Relamorelin Company or the LLC entity. Prior to August 1, 2015, these capital contributions were

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**10. Related-Party Transactions (Continued)**

recorded as financing activities in the statements of cash flows. Beginning on August 1, 2015 the liabilities due to Motus were recorded as operating activities in the statements of cash flows, as they are fully repayable and relate to the Company's operating costs. Cash transfers to the Company from the LLC entity totaled $5,720 and $1,595 for the years ended December 31, 2014 and 2015, respectively. There were no cash transfers in the period from August 1, 2015 to December 31, 2015. These amounts have been recorded by the Company within Additional Paid-in Capital as capital contributions from the LLC entity as such amounts are not repayable from the Company to the Relamorelin Company or the LLC entity. As of December 31, 2014 and 2015, these capital contributions totaled $39,147 and $42,462, respectively.

The Company made payments on behalf of the LLC entity totaling $60 related to third party services to an unaffiliated vendor. Those costs are capitalized as a recievable due from the LLC entity to the Company at December 31, 2015 on the balance sheet.

Expenses paid directly by the Company to consultants considered to be related parties amounted to zero and $153 for the year ended December 31, 2014 and 2015, respectively. Outstanding payments due to these related parties as of December 31, 2014 and 2015 were zero and $13, respectively and were included within Accounts payable on the balance sheet. Expenses paid by the Relamorelin Company to these related parties amounted to $1,017 and $1,357 for the year ended December 31, 2014 and 2015, respectively. Outstanding payments due by the Relamorelin Company on the Company's behalf to these related parties as of December 31, 2014 and 2015 were $113 and $58, respectively.

Employees of certain holders of series A and series B convertible preferred units of the LLC entity, have been retained as consultants supporting development activities of the Company and the Relamorelin Company for which the holders are paid cash compensation pursuant to consulting arrangements. Compensation payments related to these consultants totaled $184 and $125 for the years ended December 31, 2014 and 2015, respectively.

**11. Income Tax**

In the Company's financial statements, income taxes, including deferred tax balances, have been calculated on a separate tax return basis. Certain of the Company's activities and costs have been included in the tax returns filed by the Relamorelin Company and the LLC entity. Prior to the Corporate Reorganization, the Company's operations were included in the tax returns filed by the Predecessor Company. The Company has filed tax returns on its own behalf since the Corporate Reorganization.

For the years ended December 31, 2014 and 2015, the Company did not have a current or deferred income tax expense or benefit as the entity has incurred losses since inception and has provided a full valuation allowance against its deferred tax assets.

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**11. Income Tax (Continued)**

A reconciliation of the income tax expense at the federal statutory tax rate to the Company's effective income tax rate follows:

| | Year Ended December 31, | |
|---|---|---|
| | 2014 | 2015 |
| Statutory tax rate | 34.00% | 34.00% |
| State tax, net of federal benefit | 5.21% | 4.33% |
| Research and development credit | 3.19% | 0.85% |
| Orphan drug credit | — | 1.91% |
| Other | (0.36)% | (2.23)% |
| Non deductible warrant expense | — | (2.82)% |
| Change in valuation allowance | (42.04)% | (36.04)% |
| Effective tax rate | 0.00% | 0.00% |

The principal components of the Company's deferred tax assets are as follows:

| | As of December 31, | |
|---|---|---|
| | 2014 | 2015 |
| Deferred tax assets: | | |
| Net operating loss carryforwards | $ 5,979 | $ 9,481 |
| Research and development credits | 802 | 895 |
| Orphan drug credit | — | 322 |
| Capitalized license fee | 278 | 357 |
| Other | — | 16 |
| Total gross deferred tax assets | 7,059 | 11,071 |
| Deferred tax liability | — | — |
| Valuation allowance | (7,059) | (11,071) |
| Net deferred tax assets | $ — | $ — |

ASC 740 requires a valuation allowance to reduce the deferred tax assets reported if, based on the weight of available evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized. After consideration of all the evidence, both positive and negative, the Company has recorded a full valuation allowance against its deferred tax assets at December 31, 2014 and 2015, because the Company's management has determined that is it more likely than not that these assets will not be realized. The increase in the valuation allowance of $2,448 in 2014 and $4,012 in 2015 primarily relates to the net loss incurred by the Company during each period.

As of December 31, 2015, the Company had federal and state net operating loss carryforwards of approximately $26,040 and $11,873, respectively which are available to reduce future taxable income. The net operating loss carryforwards expire at various times beginning in 2033 for federal and state purposes.

As of December 31, 2014, the Company had federal and state research tax credits of approximately $596 and $313, respectively, which may be used to offset future tax liabilities. As of December 31, 2015, the

**Rhythm Pharmaceuticals, Inc.**

**Notes to Financial Statements (Continued)**

**(In thousands, except share and per share information)**

**11. Income Tax (Continued)**

Company had federal and state research tax credits of approximately $714 and $277, respectively, which may be used to offset future tax liabilities. Additionally, as of December 31, 2015, the Company had a federal orphan drug credit related to qualifying research of $322. These tax credit carryforwards will begin to expire at various times beginning in 2033 for federal purposes and 2028 for state purposes.

The net operating loss and tax credit carryforwards are subject to review and possible adjustment by the Internal Revenue Service and state tax authorities. Net operating loss and tax credit carryforwards may become subject to an annual limitation in the event of certain cumulative changes in the ownership interest of significant stockholders over a three-year period in excess of 50%, as defined under Sections 382 and 383 of the Internal Revenue Code, respectively, as well as similar state provisions and other provisions within the Internal Revenue Code. This could limit the amount of tax attributes that can be utilized annually to offset future taxable income or tax liabilities. The amount of the annual limitation is determined based on the value of the Company immediately prior to the ownership change. Subsequent ownership changes may further affect the limitation in future years.

The Company has not recorded any reserves for uncertain tax positions as of December 31, 2014 and 2015. The Company has not, as yet, conducted a study of research and development credit carryforwards. This 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 amounts are 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 sheets or statements of operations and comprehensive loss if an adjustment were required.

Interest and penalty charges, if any, related to unrecognized tax benefits will be classified as income tax expense in the accompanying statements of operations and comprehensive loss. As of December 31, 2014, and December 31, 2015, the Company had no accrued interest or penalties related to uncertain tax positions.

The Company is subject to examination by the U.S. federal, state and local income tax authorities for tax years 2013 forward. The Company is not currently under examination by the Internal Revenue Service or any other jurisdictions for any tax years.

**12. Subsequent Events**

The Company completed an evaluation of all subsequent events after the audited balance sheet date of December 31, 2015 through April 6, 2016, the date the financial statements were available to be issued, to ensure that this filing includes appropriate disclosure of events both recognized in the financial statements as of December 31, 2015, and events which occurred subsequently but were not recognized in the financial statements.

In January 2016, the Company entered into a licensing agreement with Camurus AB, or Camurus, for the use of Camurus' drug delivery technology. The contract includes a non-refundable and non-creditable signing fee of $500, which was paid during January 2016. Camurus is eligible to receive progressive and royalty payments upon the achievement of certain milestones over the course of the agreement term.

* * * * * *

Table of Contents

*Shares*


*Common Stock*

*PRELIMINARY PROSPECTUS*

*MORGAN STANLEY* *BofA MERRILL LYNCH* *PIPER JAFFRAY*

*NEEDHAM*

*Until , all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.*

*, 2016*

**PART II**
**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 13. Other Expenses of Issuance and Distribution.**

The following table sets forth the fees and expenses in connection with the issuance and distribution of the securities being registered (excluding the underwriting discount). Except for the SEC registration fee and the FINRA filing fee, all amounts are estimates.

| | Amount Paid or to be Paid |
|---|---|
| SEC registration fee | $ * |
| FINRA filing fee | * |
| NASDAQ listing fee | * |
| Legal fees and expenses | * |
| Accounting fees and expenses | * |
| Printing expenses | * |
| Transfer and registrar fee | * |
| Miscellaneous | * |
| Total | * |

* To be provided by Amendment

**Item 14. Indemnification of Directors and Officers.**

Section 145 of the Delaware General Corporation Law authorizes a corporation's board of directors to grant, and authorizes a court to award, indemnity to officers, directors, and other corporate agents.

As permitted by Delaware law, our amended and restated certificate of incorporation provides that, to the fullest extent permitted by Delaware law, no director will be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director. Pursuant to Delaware law such protection would be not available for liability:

- for any breach of a duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- for any transaction from which the director derived an improper benefit; or
- for an act or omission for which the liability of a director is expressly provided by an applicable statute, including unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law.

Our amended and restated certificate of incorporation also provides that if Delaware law is amended after the approval by our stockholders of the amended and restated certificate of incorporation to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of our directors will be eliminated or limited to the fullest extent permitted by Delaware law.

Our amended and restated bylaws further provide that we must indemnify our directors and officers to the fullest extent permitted by Delaware law. Our amended and restated bylaws also authorize us to indemnify any of our employees or agents and permit us to secure insurance on behalf of any officer, director, employee or agent for any liability arising out of his or her action in that capacity, whether or not Delaware law would otherwise permit indemnification.

In addition, our amended and restated bylaws also provide that we are required to advance expenses to our directors and officers as incurred in connection with legal proceedings against them for which they may be indemnified and that the rights conferred in the amended and restated bylaws are not exclusive.

We intend to enter into indemnification agreements with each of our directors and executive officers. These agreements, among other things, would require us to indemnify each director and officer to the fullest extent permitted by Delaware law, the amended and restated certificate of incorporation and amended and restated bylaws, for expenses such as, among other things, attorneys' fees, judgments, fines, and settlement amounts incurred by the director or executive officer in any action or proceeding, including any action by or in our right, arising out of the person's services as our director or executive officer or as the director or executive officer of any subsidiary of ours or any other company or enterprise to which the person provides services at our request. Upon consummation of the offering, we intend to obtain and maintain directors' and officers' liability insurance.

The SEC has taken the position that personal liability of directors for violation of the federal securities laws cannot be limited and that indemnification by us for any such violation is unenforceable. The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended 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.

**Item 15. Recent Sales of Unregistered Securities**

Set forth below is information regarding securities we have issued within the past three years that were not registered under the Securities Act:

On August 3, 2015, and December 1, 2015 we issued 25,000,000 shares and 15,000,000 shares, respectively, of series A preferred stock, $0.001 par value per share, to a number of accredited investors for $1.00 per share. These shares were issued in reliance on Regulation D, Rule 506 and/or Rule 4(2) under the Securities Act.

From January 1, 2013 through April 6, 2016, we granted options under the Plan to purchase an aggregate of 8,254,519 shares of our common stock to employees, consultants and directors, having exercise prices ranging from $0.50 to $0.82 per share. During this period, none of these stock options were exercised.

The offers and sales of the securities described in the foregoing paragraph were exempt from registration under Rule 701 promulgated under the Securities Act in that the transactions were under compensatory benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of such securities were our employees, directors or consultants and received the securities under the Plan. Appropriate legends were affixed to the securities issued in these transactions.

**Item 16. Exhibits and Financial Statement Schedules.**

**(a) Exhibits**

The exhibits to the registration statement are listed in the Exhibit Index attached hereto and incorporated by reference herein.

**(b) Financial Statement Schedules**

All financial statement schedules have been omitted because they are not required or because the required information is given in the financial statements or notes to those statements.

**Item 17. Undertakings.**

The undersigned Registrant hereby undertakes to provide to the underwriters at the closing 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 Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 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 to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Boston, Commonwealth of Massachusetts on the dates indicated.

**RHYTHM PHARMACEUTICALS, INC.**

By: _____

Keith M. Gottesdiener
*Chief Executive Officer*

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Keith M. Gottesdiener and Bart Henderson his true and lawful attorney-in-fact and agent with full power of substitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to sign any registration statement for the same offerings covered by the registration statement that is to be effective upon filing pursuant to Rule 462(b) promulgated under the Securities Act, and all post-effective amendments thereto, and to file the same, with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming that all said attorneys-in-fact and agents or any of them, or his or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

| Name | Title | Date |
|---|---|---|
| _____<br>Keith M. Gottesdiener | Chief Executive Officer and Director (Principal Executive Officer) | , 2016 |
| _____<br>Bart Henderson | President (Principal Financial and Accounting Officer) | , 2016 |
| _____<br>John J. Hulburt | Controller | , 2016 |
| _____<br>Neil Exter | Director | , 2016 |
| _____<br>Todd Foley | Director | , 2016 |

| Name | Title | Date |
|---|---|---|
| Christophe R. Jean | Director | , 2016 |
| Ed Mathers | Director | , 2016 |
| Jonathan T. Silverstein | Director | , 2016 |
| David P. Meeker | Director | , 2016 |
| David W. J. McGirr | Director | , 2016 |

## EXHIBIT INDEX

| Number | Description |
|---|---|
| 1.1* | Form of Underwriting Agreement. |
| 3.1* | Amended and Restated Certificate of Incorporation of the Registrant. |
| 3.2* | Bylaws of the Registrant. |
| 3.3* | Form of Amended and Restated Certificate of Incorporation of the Registrant to become effective upon the closing of this offering. |
| 3.4* | Form of Amended and Restated Bylaws of the Registrant to become effective upon the closing of this offering. |
| 4.1* | Form of Common Stock Certificate of the Registrant. |
| 4.2* | Investors' Rights Agreement, dated August 3, 2015, by and among the Registrant and the investors set forth therein. |
| 5.1* | Opinion of Morgan, Lewis & Bockius LLP. |
| 10.1†* | Form of Indemnification Agreement by and between the Registrant and its directors and officers. |
| 10.2†* | Amended and Restated 2015 Equity Incentive Plan and Forms of Option Agreements and Notice of Exercise. |
| 10.3†* | Offer Letter, dated , 2016, by and between the Registrant and Bart Henderson. |
| 10.4†* | Offer Letter, dated , 2016, by and between the Registrant and Keith M. Gottesdiener. |
| 10.5†* | Offer Letter, dated , 2016, by and between the Registrant and Fred T. Fiedorek. |
| 10.6‡ | License Agreement, dated March 21, 2013, by and between the Registrant (f/k/a Rhythm Metabolic, Inc.) and Ipsen Pharma S.A.S. |
| 10.7‡** | Development and Manufacturing Services Agreement, dated July 17, 2013, by and between the Registrant (f/k/a Rhythm Metabolic, Inc.) and Peptisyntha Inc. (n/k/a Peptisyntha SA). |
| 10.8‡ | License Agreement dated January 4, 2016, by and between the Registrant and Camurus AB |
| 10.9* | Amended and Restated Payroll Services Agreement, dated March 21, 2013, by and between the Registrant (f/k/a Rhythm Metabolic, Inc.) and Rhythm Pharmaceuticals, Inc. |
| 10.10†* | Rhythm Pharmaceuticals, Inc. 2016 Employee Stock Purchase Plan. |
| 10.11* | Lease, dated November 25, 2015, by and between 500 Boylston & 222 Berkeley Owner (DE) LLC and the Registrant. |
| 23.1* | Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm. |
| 23.2* | Consent of Morgan, Lewis & Bockius LLP. Reference is made to Exhibit 5.1. |
| 24.1 | Power of Attorney. Reference is made to the signature page hereto. |

* To be filed by amendment.

** Previously submitted.

† Indicates management contract or compensatory plan.

‡ Indicates confidential treatment has been requested with respect to specific portions of this exhibit. Omitted portions have been filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act.

# LICENSE AGREEMENT

**BETWEEN**

**IPSEN PHARMA SAS**

**AND**

**RHYTHM METABOLIC, INC.**

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* CONFIDENTIAL TREATMENT REQUESTED. OMITTED PORTIONS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 PROMULGATED UNDER THE SECURITIES ACT OF 1933, AS AMENDED.

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* CONFIDENTIAL TREATMENT REQUESTED. OMITTED PORTIONS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 PROMULGATED UNDER THE SECURITIES ACT OF 1933, AS AMENDED.



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**LICENSE AGREEMENT**

This License Agreement (this "**Agreement**") is entered into on March 21, 2013 by and between, on the one hand, IPSEN PHARMA S.A.S., a French corporation, with its principal office at 65 Quai Georges Gorse, 92100 Boulogne-Billancourt, France, on behalf of itself and its Affiliates (collectively, "**Ipsen**"), and, on the other hand, RHYTHM METABOLIC, INC., a corporation organized under the laws of the State of Delaware, U.S.A., with its principal office at 855 Boylston Street, 11th Floor, Boston MA 02116, on behalf of itself and its Affiliates (collectively, "**Licensee**"), and is effective as of the Effective Date (as defined below).

**Recitals**

1. The rights granted herein were originally granted to Rhythm Pharmaceuticals, Inc. pursuant to that certain License Agreement by and among Ipsen and Rhythm Pharmaceuticals, Inc., dated as of February 26, 2010 (the "**Original Agreement**")

2. Rhythm Pharmaceuticals, Inc. is undergoing a reorganization as a result of which Rhythm Pharmaceuticals Inc. and Rhythm Metabolic, Inc. will become wholly-owned subsidiaries of, a new parent company, Rhythm Holding Company, LLC.

3. As a result of the reorganization described above, the Original Agreement is being amended and restated simultaneously with the execution and delivery of this Agreement to narrow the rights granted thereunder to only those rights related to the Ghrelin Program, allowing the rights related to the MC4 Program originally granted thereunder to be licensed to Rhythm Metabolic, Inc. pursuant to this Agreement. All rights related to the MC4 Program licensed to Licensee hereunder shall be considered granted as of the Effective Date.

4. As a further result of the reorganization, Ipsen and Rhythm Holding Company, LLC will enter into an agreement whereby Ipsen will grant to Rhythm Holding Company, LLC the right to cause Ipsen to license to any wholly-owned subsidiaries of Rhythm Holding Company, LLC all rights related to the GIP Program and any Ipsen Metabolic Compounds.

5. Rhythm Pharmaceuticals, Inc. and Ipsen have entered into the MC4 [ ]* Agreement (as described in Section 2.11 of the Original Agreement), and such Agreement, including all title and rights granted therein, shall be assigned to Licensee in connection with the reorganization described above.

6. Ipsen has discovered and developed certain proprietary compounds that have shown activity against the MC4 protein target and may be drug candidates for use in the treatment of metabolic diseases. Ipsen also has developed and owns certain intellectual property rights useful or necessary for the development, manufacture, use and commercialization of such proprietary compounds.

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* CONFIDENTIAL TREATMENT REQUESTED. OMITTED PORTIONS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 PROMULGATED UNDER THE SECURITIES ACT OF 1933, AS AMENDED.





7. Licensee has interest in exclusively licensing the Ipsen Patent Rights (as defined below) and having access to [ ]* thereunder, to pursue a worldwide development program, and thereafter, to commercialize the resulting products.

8. The Parties have prepared this Agreement to govern the development and commercialization of products resulting from this Agreement.

**Now, Therefore,** in consideration of the premises and the mutual covenants and agreements contained in this Agreement, the Parties, intending to be legally bound, do hereby agree as follows:

## ARTICLE 1 INTERPRETATION — DEFINITIONS

**1.1** In this Agreement, unless the context otherwise requires, all references to a particular Article, Section, or Appendix, shall be a reference to that Article, Section or Appendix, in or to this Agreement, as it may be amended from time to time pursuant to this Agreement.

1.1.1 Headings are inserted for convenience only and shall not affect the meaning or interpretation of any provision of this Agreement.

1.1.2 This Agreement incorporates all Appendices as a part of this Agreement by reference.

1.1.3 The term "including" (or any variation thereof such as "include") shall be without limitation to the generality of the preceding words.

1.1.4 Unless the contrary intention appears, words in the singular shall include the plural and vice versa.

1.1.5 Unless the contrary intention appears, words denoting persons shall include any individual, partnership, company, corporation, joint venture, trust, association, organization or other entity.

1.1.6 Reference to any statute or regulation includes any modification or re-enactment of that statute or regulation.

The following capitalized terms, whether used in the singular or the plural, shall have the following meanings as used in this Agreement unless otherwise specifically indicated:

**1.2 Accounting Period** shall mean each [ ]* commencing respectively on [ ]*, each being the first day of an Accounting Period, and finishing respectively on [ ]*, each being the last day of an Accounting Period.

**1.3** **Affiliate** shall mean (a) an entity which owns, directly or indirectly, a controlling interest in a Party, by stock ownership or otherwise, (b) any entity in which a

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* CONFIDENTIAL TREATMENT REQUESTED. OMITTED PORTIONS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 PROMULGATED UNDER THE SECURITIES ACT OF 1933, AS AMENDED.





Party owns a controlling interest, by stock ownership or otherwise; or (c) any entity, under direct or indirect common control with a Party. For purposes of this paragraph, "controlling interest" and "control" mean ownership of fifty percent (50%) or more of the voting stock permitted to vote for the election of the board of directors or any other arrangement resulting in control or the right to control the management and the affairs of the Party. Notwithstanding anything express or implied in the foregoing provisions of this definition, none of (x) the stockholders of Licensee or any entities affiliated with any of such stockholders, including, without limitation, other portfolio companies of any of such stockholders or (y) Ipsen or any Affiliate of Ipsen shall be deemed or treated as an Affiliate of Licensee for any purposes of this Agreement.

**1.4** **Agreement** shall have the meaning set forth in preamble to this Agreement.

**1.5** **Arbitration Request** shall have the meaning set forth in Section 16.3.

**1.6** **Breaching Party** shall have the meaning set forth in Section 14.2.

**1.7** **Bundled Product** shall mean Licensed Product(s) sold to a third party with one or more other products or services in circumstances where either (i) the price of the Licensed Product(s) is not shown separately on the invoice or (ii) the Licensed Product(s) (or a portion of the units of Licensed Product(s)) are detailed on a separate invoice where the price is shown as nil (free of charge) for the Licensed Product(s) (or for those units of the Licensed Product(s)). Licensed Product supplied with a delivery device (and not otherwise supplied together with, or bundled or combined with, any other product or service) shall not be considered a Bundled Product.

**1.8** **Change-of-Control** shall have the meaning ascribed to it in Section 2.10.2.

**1.9** **Clinical Supply Agreements** shall have the meaning set forth in Section 8.1.

**1.10** **Competing Product** shall mean any [ ]*; provided, however, that a Licensed Product shall not be deemed or treated as a Competing Product for purposes of this Agreement.

**1.11** **Confidential Information** shall have the meaning set forth in Section 11.1.

**1.12** **Contractor** shall mean any third party with whom Licensee enters into an agreement pursuant to which Licensee grants to such third party the right to perform any services for, and on behalf of, Licensee with respect to any Licensed Product in any country of the Territory, including, without limitation, contract research, contract manufacturing or contract sales or commercialization activities. Notwithstanding the foregoing, the term "**Contractor**" shall in no event include (i) any Affiliate of Licensee, (ii) any Sublicensee and (iii) any such third party with whom Licensee enters into an

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agreement if the relationship established between Licensee and such third party pursuant to such agreement is for such third party to be a wholesale distributor of Licensed Product in any country of the Territory.

**1.13** **Control** or **Controlled** shall mean, with respect to any intellectual property right or other intangible property, the possession (whether by license from a third party or ownership, or by control over an Affiliate having possession by license from a third party or ownership) by a Party of the ability to grant to the other Party access, ownership and/or a license or sublicense to such intellectual property right or other intangible property without violating the terms of any agreement with any third party.

**1.14** **Cover** (as an adjective or as a verb including conjugations and variations such as "**Covered**," "**Coverage**" or "**Covering**") shall mean that the developing, making, using, offering for sale, promoting, selling or importing of a given compound, formulation or product would infringe a Valid Claim of an issued patent in the absence of a license under such Valid Claim. The determination of whether a compound, formulation or product is Covered by a particular Valid Claim shall be made on a country-by-country basis.

**1.15** **Delay** shall have the meaning set forth in Section 17.5.

**1.16** **Development** shall mean the pre-clinical studies, Phase I, II & III Clinical Trials, filing of NDAs, and other activities, including pharmaceutical and manufacturing development as well as regulatory work, necessary to obtain Regulatory Approval of a Licensed Product.

**1.17** **Development Plan** shall mean any version and variations of a document prepared for the Development of each Licensed Product in the Territory, that outlines the Development activities including regulatory strategies, to be performed by Licensee under this Agreement. Such a document shall contain targeted timelines of the Development phases and clinical endpoints.

**1.18** **Discloser** shall have the meaning set forth in Section 11.1.

**1.19** **Effective Date** shall mean February 26, 2010.

**1.20** **EMEA** shall mean the European Medicines Agency or any successor agency.

**1.21** **FDA** shall mean the United States of America Food and Drug Administration or any successor agency.

**1.22** **First Commercial Sale** shall mean, in each country of the Territory, each first invoiced sale by Licensee, Affiliate or Sub-Licensee to a third party of Licensed Product in the country after obtaining Regulatory Approval in such country.

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**1.23** **FTE** shall mean a period equivalent to the number of hours that an employee in the full time employment of either Party would be obliged to spend at work in any twelve (12) month period of continuous employment.

**1.24** **Gross Sales** shall mean the gross amount invoiced by Licensee, its Affiliates or Sublicensees for sales of a Licensed Product to third parties in the Territory. For purposes of clarification, [ ]*. Notwithstanding the foregoing provisions of this definition, sales of Licensed Product [ ]* shall not give rise to any Gross Sales for purposes of this Agreement.

**1.25** **Health Agency** shall mean a governmental or official body in a given country of the Territory, including FDA and EMEA, as well as any national or international or local regulatory agency, department, bureau or other governmental entity, which reviews, validates and/or delivers Regulatory Approvals.

**1.26** **Indemnified Party** shall have the meaning set forth in Section 15.3.

**1.27** **Indemnified Person** shall have the meaning set forth in Section 15.3.

**1.28** **Infringe** (as a noun, adjective or verb including conjugations and variations such as "**Infringed**," "**Infringes**", "**Infringing**" and "**Infringement**") shall mean infringement, misappropriation, unauthorized use, misuse or other violation of the Patent Rights, know-how, inventions, trade secrets or other intellectual property (except trademarks) of any person or entity, whether such person or entity owns such Patent Rights, Know-How, inventions, trade secrets or other intellectual property (except trademarks) or otherwise has the valid right of use thereof, including, without limitation, pursuant to a license.

**1.29** **Initial Development Plan** shall mean the Development Plan attached to this Agreement as Appendix C.

**1.30** **Invention** shall mean any invention, whether or not patentable, made as a result of the research or Development activities of a Party or the Parties pursuant to this Agreement. An **"Invention"** may be made by employees of Ipsen solely or jointly with a third party (an **"Ipsen Invention"**), by employees of Licensee solely or jointly with a third party (a **"Licensee Invention"**), or jointly by employees of Ipsen and Licensee with or without a third party (a **"Joint Invention"**), in each instance as determined by U.S. laws of inventorship.

**1.31** **Ipsen** shall have the meaning set forth in the preamble to this Agreement.

**1.32** **Ipsen Future Know-How** shall mean all Know-How that (A) Ipsen or any of its Affiliates owns or Controls at any time after the Effective Date (and not on or prior to the Effective Date) and during the Term and (B) either (i) is reasonably necessary to research, develop, manufacture, market, promote, use, sell, import or export any

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Licensed Product or any Unlicensed Product or (ii) is used or practiced by Ipsen, its Affiliates, sublicensees or contractors in connection with the research, Development, manufacture, marketing, promotion, use, sale, import or export of any Competing Product. Notwithstanding the foregoing provisions of this definition, the term **"Ipsen Future Know-How"** shall not include Joint Know-How, Ipsen Know-How, Ipsen New Formulation Know-How or Ipsen MC4 [ ]* Know-How.

**1.33 Ipsen Future Patent Rights** shall mean all Patent Rights that (A) Ipsen or any of its Affiliates owns or Controls at any time after the Effective Date (and not on or prior to the Effective Date) and during the Term and (B) claim any invention included within Ipsen Future Know-How. Notwithstanding the foregoing provisions of this definition, the term **"Ipsen Future Patent Rights"** shall not include Joint Patent Rights, Ipsen Patent Rights, Ipsen New Formulation Patent Rights or Ipsen MC4 [ ]* Patent Rights.

**1.34 Ipsen Future Technology** shall mean all Ipsen Future Know-How and Ipsen Future Patent Rights.

**1.35 Ipsen Indemnitees** shall have the meaning set forth in Section 15.2.

**1.36 Ipsen Joint Technology Rights** shall mean all of Ipsen's right, title and interest in the Joint Patent Rights and the Joint Know-How.

**1.37 Ipsen Know-How** shall mean, collectively, (A) all Know-How that Ipsen or any of its Affiliates owns or Controls as of the Effective Date and is necessary or useful to the research, Development, manufacture, marketing, promotion, use, sale, import or export of any Licensed Product, including, without limitation, all data and information regarding the safety and efficacy of any Licensed Product, (B) all Know-How, whether or not patentable, conceived, made, generated or developed by Ipsen or any of its Affiliates as a result of the research or Development activities of Ipsen or any of its Affiliates pursuant to this Agreement, including, without limitation, all Ipsen Inventions. The term **"Ipsen Know-How"** shall not include Joint Know-How or Ipsen New Formulation Know-How, but shall include Ipsen MC4 [ ]* Know-How, if any, that is not Joint Know-How.

**1.38 Ipsen Licensed Know-How** shall mean, collectively, (i) the Ipsen Know-How, (ii) the Ipsen Future Know-How and (iii) Ipsen's right, title and interest in Joint Know-How (including, without limitation, any Joint Know-How that is included in Ipsen MC4 [ ]* Know-How).

**1.39 Ipsen Licensed Patent Rights** shall mean, collectively, (i) the Ipsen Patent Rights, (ii) the Ipsen [ ]* Patent Rights (if and to the extent not included within the Ipsen Patent Rights), (iii) the Ipsen Future Patent Rights and (iv) Ipsen's right, title and interest in the Joint Patent Rights (including, without limitation, Joint Patent Rights that are included in Ipsen MC4 [ ]* Patent Rights).

**1.40 Ipsen Licensed Technology** shall mean all Ipsen Licensed Know-How and Ipsen Licensed Patent Rights.

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**1.41 Ipsen MC4 Patent Rights** shall mean (i) all Patent Rights that are listed in Appendix B of this Agreement and (ii) any and all substitutions, extensions or supplementary protection certificates, reissues, re-examinations, renewals, divisions, continuations, continuations-in-part and foreign counterparts with respect to such Patent Rights.

**1.42 Ipsen MC4 Compound** shall mean a [ ]*.

**1.43 Ipsen MC4 [ ]*** shall have the meaning set forth in Section 2.11.1.

**1.44 Ipsen MC4 [ ]* Know-How** shall mean all Know-How that is included within Ipsen MC4 [ ]* Technology.

**1.45 Ipsen MC4 [ ]* Patent Rights** shall mean all Patent Rights that are included within Ipsen MC4 [ ]* Technology.

**1.46 Ipsen MC4 [ ]* Technology** shall have the meaning set forth in Section 2.11.3.

**1.47 Ipsen MC4 Product** shall mean any [ ]*.

**1.48 Ipsen MC4 Program** shall mean the [ ]* program conducted by or on behalf of Ipsen or any of its Affiliates (alone or together with one or more Affiliates, partners, contractors or sublicensees) at any time on or prior to the Effective Date for purposes of [ ]*.

**1.49 Ipsen MC4 Program Invention** shall mean any invention or Know-How that (A) has been conceived, created, used or practiced in the course of carrying out the Ipsen MC4 Program or has been conceived, created or reduced to practice for the purpose of being used in the conduct of the Ipsen MC4 Program or (B) consists of the composition of matter, formulation, any method of use or any method of manufacture of any Ipsen MC4 Compound.

**1.50 Ipsen Metabolic Compounds** shall mean, collectively, [ ]*.

**1.51 Ipsen New Formulation Know-How** shall mean all Know-How that is included within Ipsen New Formulation Technology.

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**1.52 Ipsen New Formulation Patent Rights** shall mean all Patent Rights that are included within Ipsen New Formulation Technology.

**1.53 Ipsen New Formulation Technology** shall mean all Patent Rights and Know-How that (i) Ipsen or any of its Affiliates owns or Controls at any time after the Effective Date and during the Term and (ii) have been determined pursuant to, and in accordance with, the provisions of Section 2.7 hereof to be necessary or useful to the development of a new formulation for any Licensed Product that is the subject of any evaluation pursuant to Section 2.7. Notwithstanding the foregoing provisions of this definition, the term **"Ipsen New Formulation Technology"** shall not include any Ipsen Licensed Patent Rights or any Ipsen Licensed Know-How.

**1.54 Ipsen Ongoing Pre-Clinical Studies** shall have the meaning set forth in Section 6.2.

**1.55 Ipsen Patent Rights** shall mean, collectively, (i) the Ipsen MC4 Patent Rights and (ii) those Ipsen MC4 [ ]* Patent Rights, if any, that are not Joint Patent Rights. In addition, the term "**Ipsen Patent Rights**" shall be deemed automatically modified to include the Ipsen [ ]* Patent Rights if and to the extent that Ipsen obtains an exclusive license to the Ipsen [ ]* Patent Rights from [ ]*.

**1.56 Ipsen [ ]* Patent Rights** shall mean all Patent Rights in connection with the [ ]* Patent Application that Ipsen or any of its Affiliates owns or Controls at any time during the Term.

**1.57 Ipsen Technology** shall mean all Ipsen Know-How and Ipsen Patent Rights.

**1.58 Joint Know-How** shall mean Know-How, whether or not patentable, conceived, created, made, generated or developed jointly by employees of Licensee and Ipsen or any of its Affiliates (with or without a third party) as a result of the research or Development activities of the Parties pursuant to, or contemplated under, this Agreement (including, without limitation, Section 2.11 hereof). The term "**Joint Know-How**" shall include all Joint Inventions.

**1.59 Joint Patent Rights** shall mean Patent Rights that claim (i) any Joint Invention or (ii) any Joint Know-How.

**1.60 Know-How** shall mean technical and other information, including information comprising or relating to concepts, discoveries, data, designs, formulae, ideas, inventions, methods, models, assays, research plans, procedures, designs for experiments and tests and results of experimentation and testing (including results of research or Development or other developments), formulations, processes (including manufacturing processes, specifications and techniques), laboratory records, chemical, pharmacological, toxicological, clinical, analytical and quality control data, trial data, case report forms, data analyses, reports, manufacturing data, pre-clinical data and

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summaries and information contained in submissions to, and information from, ethical committees and Health Agencies, including documents containing any of the above.

**1.61 Licensed Product Claim** shall mean, for a given Licensed Product in a given country of the Territory, a Valid Claim of Ipsen Patent Rights, Ipsen [ ]* Patent Rights (to the extent not included within Ipsen Patent Rights), Ipsen Future Patent Rights or Joint Patent Rights that Covers such Licensed Product in such country.

**1.62 Licensed Product** shall mean (i) any Ipsen MC4 Product or (ii) any [ ]* that is covered by a Valid Claim of any issued patent or patent application included within Ipsen Patent Rights or Joint Patent Rights.

**1.63 Licensed Rights** shall have the meaning set forth in Section 2.1.

**1.64 Licensee** shall have the meaning set forth in the preamble to this Agreement.

**1.65 Licensee Indemnitees** shall have the meaning set forth in Section 15.1.

**1.66 Licensee Joint Technology Rights** shall mean all of Licensee's right, title and interest in and to the Joint Patent Rights and the Joint Know-How.

**1.67 Licensee Know-How** shall mean all Know-How that Licensee or any of its Affiliates owns, Controls or otherwise has in-licensed at any time during the Term. Notwithstanding the foregoing provisions of this definition, the term **"Licensee Know-How"** shall not include Ipsen Licensed Know-How, Ipsen New Formulation Know-How and Joint Know-How.

**1.68 Licensee Patent Rights** shall mean all Patent Rights that Licensee or any of its Affiliates owns, controls or otherwise has in-licensed at any time during the Term. Notwithstanding the foregoing provisions of this definition, the term **"Licensee Patent Rights"** shall not include Ipsen Licensed Patent Rights, Ipsen New Formulation Patent Rights and Joint Patent Rights.

**1.69 Licensee Technology** shall mean all Licensee Know-How and Licensee Patent Rights.

**1.70 Licensee Trademark** shall have the meaning attributed to it under Section 10.1.

**1.71 Losses** shall have the meaning set forth in Section 15.1.

**1.72 Manufacturing Cost** shall have the meaning set forth in the Clinical Supply Agreements.

**1.73 MC4 Product** shall mean any Licensed Product that [ ]*.

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**1.74** **NDA Filing** shall mean a New Drug Application filed as a result of activities under this Agreement with the FDA, or the equivalent application to the equivalent agency in any other country of the Territory, the filing of which is necessary to market and sell a Licensed Product, including all amendments and supplements to any of the foregoing.

**1.75** **Necessary Third Party IP Rights** shall mean (i) any Valid Claim of Patent Rights owned or controlled by a third party which would be Infringed by the use or practice of the Ipsen Licensed Technology, Ipsen Future Technology, the Ipsen New Formulation Technology (if and to the extent licensed to Licensee) or the Ipsen MC4 [ ]* Technology to research, develop, manufacture, market, promote, use, sell, import or export any Licensed Product in any country of the Territory or (ii) any Patent Rights or Know How owned or controlled by a third party (other than Patent Rights already within the scope of the foregoing clause (i) of this definition) that (1) are reasonably necessary to enable the research, development, manufacture, use or commercialization of a License Product in any country of the Territory, (2) are reasonably likely to materially reduce the risks or the timetable for the development of a License Product in any country of the Territory or (3) are reasonably likely to materially reduce the commercialization risk, or materially increase the anticipated Net Sales, of a Licensed Product in any country of the Territory.

**1.76** **Net Sales** shall mean Gross Sales less deductions (not otherwise taken into account) for the [ ]*.

In the event that a Licensed Product is sold as a component of a Bundled Product, then Net Sales shall be determined by multiplying the Net Sales of the Bundled Product by the fraction [ ]* where [ ]* equals the average selling price of such Licensed Product sold separately in finished form and [ ]* equals the aggregate average selling price of the relevant other product(s) included in such Bundled Product sold separately in finished form, in each case in the relevant country in which sales of such Bundled Product were made, during the same Accounting Period and in similar volumes. In the event that no separate sale of such Licensed Product is made during the applicable Accounting Period in similar volumes and in the relevant country in which the sale of such Bundled Product was made and that there are separate sales of the relevant other product(s) included in such Bundled Product in similar volumes and in the relevant country in which the sale of such Bundled Product was made, then Net Sales shall be determined by multiplying the Net Sales of the Bundled Product by the fraction [ ]*

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[ ]*, where [ ]* equals the average selling price of the Bundled Product for the country in which sales were made. In the event that no separate sale of either such Licensed Product or the relevant other product(s) is made during the applicable Accounting Period in similar volumes and in the relevant country in which the sale of such Bundled Product was made, then Net Sales shall be determined by multiplying the Net Sales of the Bundled Product by the fraction [ ]*, where [ ]* equals the fully absorbed cost of manufacturing such Licensed Product and [ ]* equals the full absorbed cost of manufacturing the relevant other product(s).

**1.77** **Non-Breaching Party** shall have the meaning set forth in Section 14.2.

**1.78** **Party** shall mean, individually, IPSEN PHARMA S.A.S. or RHYTHM METABOLIC, INC., and "**Parties**" shall mean collectively, IPSEN PHARMA S.A.S. and, RHYTHM METABOLIC, INC.

**1.79** **Patent Rights** shall mean all rights under any patent or patent application in any country of the world, including any substitution, extension or supplementary protection certificate, reissue, re-examination, renewal, division, continuation or continuation-in-part thereof.

**1.80** **[ ]*** shall mean [ ]*.

**1.81** **[ ]* Patent Application** shall mean [ ]*.

**1.82** **Phase I Clinical Trial** shall mean a human clinical trial normally conducted in healthy volunteers with the aim of establishing the pharmacokinetic, pharmacodynamic and early safety profile.

**1.83** **Phase II Clinical Trial** shall mean a human clinical trial that is required for Regulatory Approval where a product is tested in a limited number of patients for the purpose of establishing dose ranging and/or first indication of efficacy of product for a therapeutic or prophylactic use.

**1.84** **Phase III Clinical Trial** shall mean a pivotal multi-center human clinical trial in a large number of patients to establish safety or efficacy in the particular claim and indication tested and required to obtain Regulatory Approval.

**1.85** **Phase III Initiation** shall mean the date when a Licensed Product is first administered to a patient in the first Phase III Clinical Trial in the Territory.

**1.86** **Publication Eligible Material** shall have the meaning set forth in Section 12.1.

**1.87** **Receiver** shall have the meaning set forth in Section 11.1.

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**1.88** **Regulatory Approval** shall mean any and all approvals, licenses, registrations or authorizations (including pricing and reimbursement approvals) whether or not conditional, that are granted by FDA, EMEA or other Regulatory Authority and are necessary for the commercial sale of Licensed Product in a regulatory jurisdiction in the Territory and obtained as a result of activities under this Agreement.

**1.89** **Regulatory Authority** shall mean any national, supra-national (e.g., the FDA, the European Commission, the Council of the European Union, or the European Medicines Agency ("EMEA")), regional, state or local regulatory agency, department, bureau, commission, council or other governmental entity in any jurisdiction of the Territory involved in the granting of Regulatory Approval for pharmaceutical products.

**1.90** **ROW** shall mean [ ]*.

**1.91** **Royalty Term** shall mean for each Licensed Product and each country of the Territory, (a) the period of time commencing on the First Commercial Sale in such country of such Licensed Product and ending on the tenth ($10^{th}$) anniversary of such First Commercial Sale and (b) any period of time after such tenth ($10^{th}$) anniversary during which there is a Licensed Product Claim in such country with respect to such Licensed Product.

**1.92** **Section 2.10 Negotiation Period** shall have the meaning set forth in Section 2.10.

**1.93** **Sublicense Agreement** shall mean any agreement entered into with a third party whereby such third party is granted a sublicense under the Licensed Rights or such third party is granted an option to acquire a sublicense under the Licensed Rights. Notwithstanding anything express or implied in the foregoing provisions of this definition, the term "**Sublicense Agreement**" shall not include any agreement entered into with a third party whereby such third party is granted the right or option to purchase its supply of Licensed Product in finished form from Licensee, its Affiliates or Sublicensees for resale unto the market, unless, as a partial or full consideration for such purchase, such third party has a payment obligation to Licensee, its Affiliates or Sublicensees that is a percentage of such third party's net sales, including without limitation a royalty obligation.

**1.94** **Sublicensee** means a third party (other than an Affiliate of Licensee) that has entered into a Sublicense Agreement.

**1.95** **Sublicensing Revenue** shall mean any upfront option payments, upfront license fee payments (excluding the fair market value of equity sold, funding for the sole purpose of supporting identified and planned research and development works relating to the Licensed Products, transfer of goods and materials at cost plus an industry standard premium, bona fide loans and bona fide payments to reimburse Licensee or any of its Affiliates for patent prosecution costs incurred in connection with Licensed Products) or milestone payments (including without limitation milestone payments relating to

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research, development, regulatory or commercial events) to be paid by a Sublicensee to Licensee or any of its Affiliates pursuant to a Sublicense Agreement if and to the extent that such upfront option payments, upfront license fee payments and milestone payments are consideration for any sublicense under the Licensed Rights that is granted pursuant to such Sublicense Agreement or any option granted under such Sublicense Agreement to acquire such sublicense.

**1.96** **Term** shall have the meaning set forth in Section 14.1.

**1.97** **Territory** shall mean [ ]*.

**1.98** **Unlicensed Product** shall mean, with respect to any Licensed Product in any given country within the Territory, any product or pharmaceutical composition that (A) contains [ ]* as such Licensed Product, and (B) is commercially available in such country other than as a result of the licenses granted by Ipsen to Licensee pursuant to this Agreement.

**1.99** **Valid Claim** shall mean a claim in any (a) unexpired and issued Patent Right that has not been dedicated to the public, disclaimed, revoked or held invalid by a final unappealable decision or unappealed decision of a court of competent jurisdiction after the period for filing an appeal has expired or (b) pending patent application which patent application has been on file with the application patent office for no more than [ ]* from the earliest date from which the patent application was filed or claims earliest priority.

**1.100** **Withholding Party** shall have the meaning set forth in Section 5.4.

## ARTICLE 2 GRANT OF RIGHTS

**2.1 License Grants.** Subject to the terms of this Agreement, Ipsen, for and on behalf of itself and all of its Affiliates, hereby grants to Licensee and its Affiliates the following rights (the "**Licensed Rights**"):

- an exclusive (even as to Ipsen and its Affiliates) right and license in all countries of the Territory, under the Ipsen Technology and the Ipsen Joint Technology Rights, to research, develop, register, use, make, have made, import, export, market, distribute, offer for sale and sell Licensed Product in the Territory for any and all uses and fields of use (it being understood and agreed that, notwithstanding the foregoing exclusive grant to Licensee, Licensee hereby authorizes and consents to the exercise by Ipsen and its Affiliates of any and all rights under the Ipsen Technology and the Ipsen Joint Technology Rights if and to the extent necessary for the sole purpose of Ipsen performing its obligations under this Agreement), and

- a non-exclusive right and license in all countries of the Territory under the Ipsen [ ]* Patent Rights (to the extent that the Ipsen [ ]* Patent Rights are not included within the Ipsen Patent Rights) to research, develop, register, use,

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make, have made, import, export, market, distribute, offer for sale and sell Licensed Product in the Territory for any and all uses and fields of use, and

- a non-exclusive right and license in all countries of the Territory, under the Ipsen Future Technology, to research, develop, register, use, make, have made, import, export, market, distribute, offer for sale and sell Licensed Product in the Territory for any and all uses and fields of use.

**2.2 Rights retained by Ipsen.** All rights in and to the Ipsen Technology, Ipsen Joint Technology Rights, the Ipsen Future Technology and the Ipsen [ ]* Patent Rights not expressly granted to Licensee under this Agreement are reserved exclusively to Ipsen and its Affiliates.

**2.3 Sublicenses.** The rights and licenses granted to Licensee under Section 2.1 shall include the right to grant sublicenses under the Licensed Rights and shall also include the right to grant to a Sublicensee the right to grant further sublicenses to the extent of the Licensed Rights so sublicensed to such Sublicensee. If Licensee or any of its Affiliates enters into a Sublicense Agreement, Licensee shall ensure that all of the applicable terms and conditions of this Agreement shall apply to the applicable Sublicensee to the same extent as they apply to Licensee with respect to, and to the extent, of the Licensed Rights so sublicensed. Licensee shall assume full responsibility for the performance of all obligations so imposed on such Sublicensee and will itself account to Ipsen for all payments due under this Agreement by reason of such Sublicense Agreement. Upon execution of any Sublicense Agreement, Licensee shall provide Ipsen with the financial terms of such Sublicense Agreement for the purposes of evaluating the Share of Sublicensing Revenue owed to Ipsen as per Section 3.4 of this Agreement.

**2.4 Contractors.** The rights and licenses granted to Licensee under Section 2.1 shall include the right to grant rights to Contractors under Licensed Rights, in whole or in part, and shall also include the right to grant to any direct or indirect third party Contractors the right of such Contractors to further subcontract such Licensed Rights to another third party. If Licensee or any of its Affiliates enters into an agreement with a Contractor pursuant to this Section 2.4, Licensee shall ensure that all of the applicable terms and conditions of this Agreement shall apply to the Contractor to the same extent as they apply to Licensee with respect to, and to the extent, of the rights granted. Licensee shall assume full responsibility for the performance of all obligations so imposed on Contractor and will itself account to Ipsen for all payments due under this Agreement by reason of such subcontract.

**2.5 Intellectual Property Rights of Ipsen Affiliates.** In the event that any of the intellectual property rights granted by Ipsen and its Affiliates to Licensee and its Affiliates pursuant to Section 2.1 above are owned or Controlled by any Affiliate of Ipsen and not by Ipsen, Ipsen hereby agrees to take such action as may be required (including, without limitation, exercising control over such Affiliate) to ensure that Licensee and its Affiliates, can fully enjoy, exploit and exercise all of their respective rights under this Agreement with respect to such intellectual property rights to the same extent as if such Affiliate were a party to this Agreement.

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**2.6 Prohibited Uses and Activities**

2.6.1 Ipsen shall not use or practice any Licensed Rights in contravention or violation of the rights thereunder or thereto granted to Licensee pursuant to Section 2.1. Ipsen shall not grant licenses or otherwise transfer any rights to any person or entity (other than Licensee and its Affiliates) if and to the extent that any such grant or other transfer would violate, contravene, conflict with, or be inconsistent with, the rights granted to Licensee pursuant to Section 2.1 hereof.

2.6.2 During [ ]*, (i) neither Ipsen nor its Affiliates shall research, seek to discover, develop, make, have made, use, distribute, market, sell or otherwise commercialize any Licensed Product or any Unlicensed Product except if and to the extent expressly provided or permitted in this Agreement and in accordance with the terms of this Agreement and (ii) neither Ipsen nor its Affiliates shall grant to any person (other than Licensee and its Affiliates) any right or license to discover, develop, make, have made, use, distribute, market, sell or otherwise commercialize any Licensed Product or Unlicensed Product except if and to the extent expressly provided or permitted in this Agreement and in accordance with the terms of this Agreement.

2.6.3 During [ ]* (i) neither Ipsen nor its Affiliates shall research, seek to identify, develop, make, have made, use, distribute, market, sell or otherwise commercialize any Competing Product for the treatment of any of the indications for which Licensee intends to develop the relevant Licensed Product (with which such Competing Product is likely to compete) as set forth in the Initial Development Plan and (ii) neither Ipsen nor its Affiliates shall grant to any person (other than Licensee and its Affiliates) any right or license to research, seek to discover, develop, make, have made, use, distribute, market, sell or otherwise commercialize any Competing Product for the treatment of any such indications.

2.6.4 During [ ]*, (i) neither Ipsen nor its Affiliates shall use or practice any Ipsen Technology or any Ipsen Joint Technology Rights, for the purpose of, or in connection with, discovering, identifying, researching, developing, making, having made, using, distributing, marketing, selling or otherwise commercializing any Competing Product and (ii) neither Ipsen nor its Affiliates shall grant to any person (other than Licensee or any of its Affiliates) any right or license to use or practice any Ipsen Technology or any Ipsen Joint Technology Rights, for the purpose of, or in connection with, discovering, identifying, researching, developing, making, having made, using, distributing, marketing, selling or otherwise commercializing any Competing Product.

**2.7 Ipsen New Formulation Technology**

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2.7.1 At the written request of Licensee made at any time during [ ]* (such request being accompanied by [ ]*), Ipsen or any of its Affiliates shall undertake an evaluation of Patent Rights and Know-How owned or Controlled by Ipsen or any of its Affiliates that are not included within Ipsen Technology, Joint Patents or Joint Know-How and that the Parties, acting reasonably and in good faith, believe may be necessary or useful to the development of a new formulation for any Licensed Product that is specifically identified by Licensee (the "**Evaluation Formulation Technology**"). Any such evaluation shall be conducted by Ipsen or any of its Affiliates pursuant to an agreement to be negotiated and entered into by the Parties acting reasonably and in good faith (the "**Formulation Technology Evaluation Agreement**"). It is hereby understood and agreed by the Parties that the Formulation Evaluation Agreement shall provide that, at Ipsen's discretion, the actual activities required in connection with such evaluation may be conducted by a contract research organization mutually acceptable to the Parties. In the event that, based on the results of such evaluation, the Parties, acting reasonably and in good faith, identify any Evaluation Formulation Technology that is necessary or useful to the development of a new formulation for any such Licensed Product specifically identified by Licensee, (i) any such Evaluation Formulation Technology shall be included within the definition of, and treated for all purposes of this Agreement as, Ipsen New Formulation Technology and (ii) the Parties, acting reasonably and in good faith, shall negotiate the terms of, and execute and deliver, a license agreement pursuant to which Ipsen and its Affiliates would grant to Licensee an exclusive (even as to Ipsen and its Affiliates) right and license in all countries of the Territory, under such Ipsen New Formulation Technology, to research, develop, use, make, have made, import, export, market, distribute, offer for sale and sell Licensed Products. Such license rights shall be exclusive only with respect to Licensed Products and Ipsen shall not be prohibited from using or granting such Ipsen New Formulation Technology for any compound or product that is not a Licensed Product, a Competing Product or an Unlicensed Product. Any such exclusive license shall include the right grant sublicenses under such license rights.

2.7.2 The obligation of the Parties to negotiate a license agreement pursuant to Section 2.7.1 shall have as an objective to reach good faith agreement on terms that are scientifically and commercially reasonable. The Parties hereby acknowledge and agree that, in reaching agreement on the appropriate royalty rate applicable to such exclusive license under Ipsen New Formulation Technology, the Parties shall take into account [ ]* and [ ]*. Notwithstanding anything expressed or implied in the foregoing provisions of this Section 2.7 to the contrary, in no event shall the royalty rate applicable to Net Sales of any Licensed Product with a formulation developed with, or covered by, all or any portion of the Ipsen New Formulation Technology exceed (i) [ ]* or (ii) [ ]* in the event that (x) such Licensed Product is an Ipsen MC4 Product, (y) such Licensed Product also

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utilizes the Ipsen MC4 [ ]*, (z) the Ipsen MC4 [ ]* was accepted in writing by Licensee pursuant to Section 2.11.1 and (zz) the Ipsen MC4 [ ]* is Covered by Ipsen MC4 [ ]* Patent Rights.

2.7.3 Notwithstanding anything express or implied in the foregoing provisions of this Sections 2.7, the provisions of Section 2.7.1 and Section 2.7.2 (other than the last sentence thereof) shall not be applicable to the Ipsen MC4 [ ]* or the Ipsen MC4 [ ]* Technology.

**2.8 [Intentionally Omitted.]**

**2.9 [Intentionally Omitted.]**

**2.10 Ipsen's Right of Non-Exclusive Negotiation for Licensed Product**

2.10.1 Prior to Licensee entering into any Sublicense Agreement with a third party (a "**Potential Sublicensee**") pursuant to which Licensee shall grant a sublicense under the Licensed Rights to such Potential Sublicensee to develop and/or commercialize one or more Licensed Products (collectively, the "**Sublicensed Products**" and each individually a "**Sublicensed Product**") for all or part of the Territory (all or any part of the Territory covered by any such Sublicense Agreement being hereinafter referred to as the "**Sublicensed Territory**") and prior to Licensee entering into any exclusivity agreement with any Potential Sublicensee relating to the exclusive negotiation of any such Sublicense Agreement, (i) Licensee shall notify Ipsen in writing that Licensee is willing to enter into non-exclusive negotiations with Ipsen for the grant by Licensee to Ipsen of commercialization rights to such Sublicensed Products for the Sublicensed Territory and (ii) Licensee shall comply with all of the provisions set forth below in this Section 2.10.1. As soon as practicable (but in any event within [ ]* of receipt by Ipsen of such notice from Licensee), Ipsen will respond to Licensee in writing regarding Ipsen's interest in entering into such non-exclusive negotiations. If Ipsen responds to Licensee in writing that it is not interested in entering into such non-exclusive negotiations, then all obligations of the Parties under this Section 2.10 with respect to such Sublicensed Products in the Sublicensed Territory shall terminate and be of no further force or effect, both at that time and in the future, unless Licensee does not enter into a definitive Sublicense Agreement with a Potential Sublicensee within [ ]* after the date that Ipsen last delivered a written response to Licensee stating that Ipsen was not interested in entering into such non-exclusive negotiations, in which case the Party's respective rights and obligations under this Section 2.10 with respect to such Sublicensed Products in the Sublicensed Territory shall once again become applicable at that time. If Ipsen responds to Licensee in writing that it is interested in entering into such non-exclusive negotiations, the Parties will promptly commence non-exclusive, good faith negotiations through and until the earlier of (1) the [ ]* following the date that Ipsen gives such written notice to Licensee, provided that Licensee may elect, in its sole

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and absolute discretion, to have the period covered by this clause (1) be longer than [ ]* by giving written notice of such election to Ipsen (which written notice shall specify the length of such period), (2) the date that the Parties jointly determine and agree to end such negotiations and (3) the date that Ipsen notifies Licensee in writing that Ipsen does not want to continue negotiations (the period of such negotiations being hereinafter referred to as the "**Section 2.10 Negotiation Period**"). Notwithstanding anything express or implied in the foregoing provisions of this Section 2.10.1 to the contrary, (A) Licensee retains the right to terminate any such negotiations with Ipsen at any time prior to [ ]* if Licensee makes a determination, in its sole and absolute discretion, that Licensee is no longer considering granting commercialization rights to such Sublicensed Products to Ipsen and any Potential Sublicensees and (B) Licensee shall have the right to conduct discussions or negotiations with Potential Sublicensees prior to, simultaneously with, and/or after termination of, the negotiations with Ipsen, provided that Licensee shall not enter into a definitive agreement with any of such Potential Sublicensees until after [ ]*. If upon [ ]*, Licensee and Ipsen shall not have entered into a definitive agreement pursuant to which Licensee has granted to Ipsen commercialization rights to such Sublicensed Products, then Licensee will be free at any time thereafter to enter into any definitive agreement with a Potential Sublicensee pursuant to which Licensee grants to such Potential Sublicensee any commercialization rights to such Sublicensed Products in the Sublicensed Territory; provided, however, that (i) Licensee shall not enter into any such definitive agreement with a Potential Sublicensee if the terms of such definitive agreement are less favorable to Licensee and its business than the last terms with respect to such Sublicensed Products that were proposed by Ipsen in writing during the applicable Section 2.10 Negotiation Period and (ii) if Licensee does not enter into a definitive Sublicense Agreement with a Potential Sublicensee within [ ]*, the Party's respective rights and obligations under this Section 2.10 with respect to such Sublicensed Products in the Sublicensed Territory shall once again become applicable at that time.

2.10.2 Notwithstanding anything express or implied in any of the provisions of Section 2.10.1 to the contrary, this Section 2.10 shall automatically terminate upon the earlier to occur of (x) the closing of the Licensee's initial public offering or (y) the occurrence of a Change of Control of Licensee. For purposes hereof, the term "**Change of Control**" shall mean, with respect to Licensee, (i) any merger or consolidation involving Licensee or any sale of outstanding shares of capital stock of Licensee, if the stockholders of Licensee immediately prior to the consummation of such merger, consolidation or sale of outstanding shares no longer hold at least a majority of the issued and outstanding shares of capital stock of Licensee immediately after the consummation of such merger, consolidation or sale of outstanding shares and (ii) the sale of all or substantially all of the assets of Licensee. For purposes of clarification, (A) any

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equity financing or any other transaction by Licensee pursuant to which Licensee directly issues shares of its capital stock shall not be a transaction subject to clause (i) of this Section 2.10.2, and (B) neither Licensee nor Ipsen shall have any rights or obligations under Section 2.10.1 in connection with any Change of Control of Licensee (it being understood and agreed that a Change of Control of Licensee is not the type of transaction that the Parties envision as triggering the provisions of Section 2.10.1).

**2.11 Ipsen MC4 [ ]***

2.11.1 **[Intentionally Ommitted.]**

2.11.2 Licensee shall evaluate any new formulation developed by Ipsen pursuant to the MC4 [ ]* Agreement and shall give written notice to Ipsen if Licensee determines, in its sole and absolute discretion, that such new formulation meets the characteristics, profile and specifications provided by Licensee therefor set forth in the MC4 [ ]* development of MC4 Products. If Licensee gives such written notice to Ipsen with respect to any such new formulation, then such new formulation shall be referred to in this Agreement as the "**Ipsen MC4 [ ]***".

2.11.3 All Patent Rights and Know-How owned or Controlled by Ipsen or any of its Affiliates that are conceived, invented, generated or reduced to practice during the conduct of the activities under the MC4 [ ]* Agreement and/or that are necessary or useful MC4 [ ]* to the development, manufacture, use or commercialization of any Licensed Product using the Ipsen MC4 [ ]* (such Patent Rights and Know-How being referred to in this Agreement as the "**Ipsen MC4 [ ]* Technology**") shall be included within the definition of, and treated for all purposes of this Agreement as, Ipsen Technology, Joint Patents or Joint Know-How, as applicable, such that the exclusive license granted by Ipsen to Licensee under Section 2.1 hereof shall include the exclusive right and license (even as to Ipsen and its Affiliates) in all countries of the Territory, under the Ipsen MC4 [ ]* Technology, to research, develop, use, make, have made, import, export, market, distribute, offer for sale and sell Licensed Products. Any such exclusive right and license shall include the right grant sublicenses under such license rights. For the avoidance of doubt and notwithstanding anything to the contrary in this Agreement, it is agreed that (x) Licensee shall have no right to practice, develop, commercialize, license or use the Ipsen MC4 [ ]* Technology except to the extent contemplated or permitted under this Agreement (including, without limitation, Section 2.1 hereof) and (y) Ipsen shall retain all rights to practice, develop, commercialize, license and otherwise use the Ipsen MC4 [ ]* Technology in connection with any product or compound that is not a Licensed Product or a Competing Product.

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**2.12 Third Party Payments by Ipsen.** Ipsen shall make payment of all license fees, milestone payments, royalty payments and other payments that Ipsen or any of its Affiliates is required to pay under or in connection with any agreement with a third party pursuant to which Ipsen or any of its Affiliates acquires or has acquired Patent Rights (including, without limitation, the Ipsen [ ]* Patent Rights) or Know How or other intellectual property rights licensed or sublicensed by Ipsen to License and its Affiliates pursuant to this Agreement.

## ARTICLE 3 MILESTONE PAYMENTS; PAYMENT OF SHARE OF SUBLICENSING REVENUES

**3.1** Subject to the provisions of this Section 3.1 and Section 3.5 below, Licensee shall pay to Ipsen the following non-refundable and non-creditable amounts upon the occurrence of the following development milestones with respect to an Ipsen MC4 Product:

| Development Milestones | Amount |
|---|---|
| [ ]* | [ ]* |
| [ ]* | [ ]* |
| [ ]* | [ ]* |
| [ ]* | [ ]* |
| [ ]* | [ ]* |
| [ ]* | [ ]* |

Each milestone payment by Licensee to Ipsen pursuant to the foregoing provisions of this Section 3.1 shall be paid only once upon the first occurrence of the applicable development milestone, regardless of how many times a particular development milestone is achieved and notwithstanding that more than one Ipsen MC4 Product achieves a given development milestone. Without limiting the generality of the foregoing sentence, in no event shall the aggregate amount of milestone payments made by Licensee to Ipsen pursuant to this Section 3.1 under any circumstances exceed [ ]*.

Licensee shall promptly inform Ipsen of the occurrence of any of the above development milestones and Licensee shall make payment of any milestone payment that Licensee is required to make pursuant to this Section 3.1 within [ ]* after the achievement of the applicable development milestone.

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**3.2** Subject to the provisions of this Section 3.2 and Section 3.5 below, Licensee shall pay to Ipsen the following non-refundable and non-creditable amounts upon the occurrence of the following commercialization milestones with respect to an Ipsen MC4 Product:

| Commercialization Milestones | Amount |
|---|---|
| [ ]* | [ ]* |
| [ ]* | [ ]* |

Each milestone payment by Licensee to Ipsen pursuant to the foregoing provisions of this Section 3.2 shall be paid only once upon the first occurrence of the applicable commercialization milestone, regardless of how many times a particular commercialization milestone is achieved and notwithstanding that more than one Ipsen MC4 Product achieves a given commercialization milestone. Without limiting the generality of the foregoing sentence, in no event shall the aggregate amount of milestone payments made by Licensee to Ipsen pursuant to this Section 3.2 under any circumstances exceed [ ]*.

Licensee shall promptly inform Ipsen of the occurrence of any of the above commercialization milestones and Licensee shall make payment of any milestone payment that Licensee is required to make pursuant to this Section 3.2 within [ ]* after the end of the calendar quarter during which the applicable commercialization milestone is achieved.

**3.3** Subject to the provisions of Section 3.5 below, in the event that Licensee or any of its Affiliates, on the one hand, and Sublicensee, on the other hand, execute and deliver a Sublicense Agreement, Licensee shall make payment to Ipsen of the Share (as defined in Section 3.4 below) of all Sublicensing Revenues actually received by Licensee or any of its Affiliates under such Sublicense Agreement. Licensee shall make any payment that Licensee is required to make to Ipsen pursuant to this Section 3.3 within [ ]* of the end of the Accounting Period in which Licensee or any of its Affiliates actually received any such Sublicensing Revenues.

**3.4** The Share shall depend on the date of execution of the relevant Sublicense Agreement, as follows:

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| Date of execution of the Sublicense Agreement | Share |
|---|---|
| [ ]* | [ ]* |
| [ ]* | [ ]* |
| [ ]* | [ ]* |

For purposes of clarification, "completion" shall mean [ ]*.

Notwithstanding anything express or implied in the foregoing provisions of this Section 3.4 or elsewhere in this Agreement to the contrary, it is hereby understood and agreed that if Licensee or any of its Affiliates enters into Sublicense Agreement pursuant to which the applicable Sublicensee is granted an option that entitles such Sublicensee upon exercise of such option to obtain a sublicense under the Licensed Rights, Ipsen's Share of Sublicensing Revenues should be calculated under this Section 3.4 as follows :

(i) Ipsen's Share of any upfront option fees actually received by Licensee or any of its Affiliates in connection with the grant of such option shall be [ ]*, and

(ii) Ipsen's Share under this Section 3.4 of any upfront license fees and milestone payments actually received by Licensee or any of its Affiliates in connection with the grant of any such sublicense under the Licensed Rights upon exercise of such option shall be [ ]*.

For example, in the event that [ ]*

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[ ]*, then [ ]*.

**3.5** Notwithstanding anything express or implied in the foregoing provisions of this Article 3, in the event that, but for the provisions of this Section 3.5, the same development or commercialization milestones would trigger the payment of a milestone payment pursuant to Sections 3.1 through 3.2 hereof and also the payment pursuant to Sections 3.3 and 3.4 of a Share of any Sublicensing Revenue actually received by Licensee or any of its Affiliates in connection with such development or commercialization milestones, Licensee shall pay to Ipsen [ ]*.

## ARTICLE 4 PAYMENTS BASED ON SALES OF LICENSED PRODUCT

**4.1** **Royalties.** In consideration for the rights and license granted under this Agreement, Licensee shall, subject to the provisions of Sections 4.2, 4.3 and 4.4 below, pay royalties to Ipsen based upon Net Sales of any given Licensed Product in any given country in the Territory during the Royalty Term applicable to sales of such Licensed Product in such country, which royalties shall be equal to [ ]* of such Net Sales; provided, however, that, subject to the provisions of Sections 4.2, 4.3 and 4.4 below, if (i) such Licensed Product is an Ipsen MC4 Product that utilizes the Ipsen MC4 [ ]*, (ii) the Ipsen MC4 [ ]* was accepted in writing by Licensee pursuant to Section 2.11.1 and (iii) the Ipsen MC4 [ ]* is Covered by Ipsen MC4 [ ]* Patent Rights, then the royalty rate applicable to Net Sales of such Ipsen MC4 Product in any given country in the Territory during the Royalty Term applicable to sales of such Ipsen MC4 Product in such country shall be (A) [ ]* if the Ipsen MC4 [ ]* is delivered by Ipsen to Licensee pursuant to Section 2.11.1 within [ ]* after the date of the MC4 [ ]* Agreement, (B) [ ]* if the Ipsen MC4 [ ]* is delivered by Ipsen to Licensee pursuant to Section 2.11.1 at any time after the [ ]* following the date of the MC4 [ ]* Agreement and such Ipsen MC4 Product in a formulation consisting of the Ipsen MC4 [ ]* is used by Licensee in [ ]* or (C) [ ]* if neither of the foregoing clauses (A) and (B) is applicable. For purposes of clarification, the determination of the amount of royalties

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due Ipsen pursuant to this Section 4.1 shall be made on a Licensed Product-by-Licensed Product basis and on a country-by-country basis. Payment of royalties due to Ipsen pursuant to this Article 4 shall be made in accordance with the provisions of Article 5 hereof.

**4.2 Adjustments related to Unlicensed Products.** Notwithstanding anything express or implied in Section 4.1 to the contrary and subject to Section 4.4 hereof, if, during the Royalty Term in a given country of the Territory, (i) there is no Valid Claim of an issued patent within Ipsen Patent Rights or Joint Patent Rights that Covers the sale of a Licensed Product in such country, and (ii) the aggregate sales revenue in such country of Unlicensed Products (expressed in the currency of such country) constitute more than [ ]* of the market share with respect to the aggregate sales revenue of such Unlicensed Products and such Licensed Product in such country (expressed in the currency of such country), then Licensee shall have the right to calculate royalty payments due to Ipsen pursuant to this Agreement by including only [ ]* of the amount of Net Sales that would have otherwise been included for such Licensed Product in such country to calculate such royalty payments. For the avoidance of doubt, such adjustment of royalties shall apply only if the applicable Unlicensed Products contain the same [ ]* as the applicable Licensed Product. In case of a disagreement between the Parties on the market share of one or more Unlicensed Products in any country of the Territory, the Parties agree to refer such dispute to arbitration pursuant to Article 16.

**4.3 Adjustments Related to Necessary Third Party IP Rights.** Subject to Section 4.4 below, on a Licensed Product-by-Licensed Product basis and on a country-by-country basis, (i) if Licensee or any of its Affiliates or Sublicensees is obligated to remit payments (the "**Necessary Third Party IP Rights Payments**") to any third party in accordance with the terms of any license entered into by Licensee or any of its Affiliates or Sublicensees with respect to Necessary Third Party IP Rights owned or controlled by such third party (and, in the case of payments required to be so remitted by any such Sublicensee, royalties otherwise due from such Sublicensee to Licensee or any of its Affiliates are reduced as a result of any such required remittance by such Sublicensee) and/or (ii) if (1) Licensee or any of its Affiliates has not obtained a license under Ipsen New Formulation Technology pursuant to Section 2.7 hereof and (2) Licensee or any of its Affiliates or Sublicensees is obligated to remit payments ("**Third Party Formulation Technology Payments**") to any third party in accordance with the terms of any license entered into by Licensee or any of its Affiliates or Sublicensees with respect to formulation technology owned or controlled by such third party and used by Licensee or any of its Affiliates and Sublicensees with any Licensed Product ("**Third Party Formulation Technology**") (and, in the case of payments required to be so remitted by a Sublicensee, royalties otherwise due from such Sublicensee to Licensee or any of its Affiliates are reduced as a result of any such required remittance by such Sublicensee), Licensee shall be permitted to offset [ ]* of Necessary Third Party IP Rights Payments and/or [ ]* of Third Party Formulation Technology Payments against royalties due to Ipsen under this Agreement with respect to sales of the applicable Licensed Product in the applicable country; provided, however, that (i) any offset of Third Party Formulation Technology Payments shall not result in a reduction of more than [ ]* of the royalty payments that would otherwise have been due to Ipsen under this

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Agreement in any calendar year with respect to sales of the applicable Licensed Product in the applicable country and (ii) any offset of Necessary Third Party IP Rights Payments shall not result in a reduction of more than [ ]* of the royalty payments that would otherwise have been due to Ipsen under this Agreement in any calendar year with respect to sales of the applicable Licensed Product in the applicable country. In case Licensee has not been able to offset any allowed amount during any relevant calendar year, no resulting payment shall be due from Ipsen to Licensee as a result of such shortfall, but Licensee shall be entitled to carry over such shortfall to one or more subsequent calendar years and seek to offset the full amount of such shortfall against payments otherwise due to Ipsen in such subsequent calendar year or calendar years (subject always to the limitation set forth in this Section 4.3 and in Section 4.4).

**4.4 Total Section 4.3 and Section 4.4 Adjustments**. In no event shall the adjustments provided under Sections 4.2 and 4.3 hereof, applied individually or cumulatively, result in an effective royalty rate in connection with royalty payments to Ipsen under this Agreement of less than (i) [ ]* on Net Sales of any Licensed Product in any country in any calendar year during the Royalty Term, or (ii) [ ]* on Net Sales of any Licensed Product in any country in any calendar year during the Royalty Term in the event that (w) such Licensed Product is an Ipsen MC4 Product, (x) such Licensed Product utilizes the Ipsen MC4 [ ]*, (y) the Ipsen MC4 [ ]* was accepted in writing by Licensee pursuant to Section 2.11.1 and (z) the Ipsen MC4 [ ]* is Covered by Ipsen MC4 [ ]* Patent Rights.

## ARTICLE 5 PAYMENT, REPORTING, AUDITING

**5.1 Currency and Conversion.** Subject to the provisions set forth below in this Section 5.1, all payments under this Agreement shall be in US Dollars except for royalty payments with respect to Net Sales made in ROW, which shall be made in Euros. As regards Net Sales in United States of America, Licensee shall calculate Net Sales and calculate and pay corresponding royalties in US Dollars. Whenever calculations of Net Sales or royalties require conversion from any currency into Euros, Licensee shall convert into Euros the amount of Gross Sales and Net Sales, using the [ ]* exchange rates (as published in the Wall Street Journal European Edition or if no longer available any other sources mutually-agreed by the Parties) of the last working day of each applicable Accounting Period.

**5.2 Payments and Reporting.** After the First Commercial Sale of Licensed Product in the Territory, Licensee shall calculate royalties quarterly at the end of each Accounting Period [ ]* and shall pay royalties on Net Sales quarterly within [ ]* after the end of each Accounting Period.

With each such payment, Licensee shall provide in writing to Ipsen for the relevant Accounting Period at least the following information split by United States of America, and any other countries of the Territory:

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- Gross Sales (expressed in the currency in which the sale of Licensed Product is made, and, for Gross Sales achieved in the ROW, the applicable conversion rates and the resulting amount in Euros, subject to the provisions of Section 5.1 above) on a Licensed Product-by-Licensed Product basis, in unit and in value;

- Net Sales (expressed in the currency in which the sale of Licensed Product is made, and, for Net Sales achieved in the ROW, the applicable conversion rates and the resulting amount in Euros, subject to the provisions of Section 5.1 above) on a Licensed Product-by-Licensed Product basis, in unit and in value;

- Total royalty payable (expressed in USD for the USA and in Euros for ROW, subject to the provisions of Section 5.1 above) on a Licensed Product-by-Licensed Product basis.

**5.3 Late payments.** Any payment under Articles 3 and 4 that is not timely paid shall bear interest, to the extent permitted by applicable law, at [ ]*.

**5.4 Taxes**

Each Party shall pay all sales, turnover, income, revenue, value added, and other taxes levied on account of payments accruing or made to it under this Agreement. Nothing in the foregoing sentence shall be deemed to affect the definition of Manufacturing Cost and/or any right that Ipsen specifically is provided or granted under this Agreement to charge and collect from the other Party the Manufacturing Cost incurred by Ipsen in connection with Licensed Product supplied by such Party to the other Party under the terms and conditions of the Clinical Supply Agreements.

If provision is made in law or regulation of any country for withholding of taxes of any type, levies or other charges with respect to any amounts payable under this Agreement to a Party, the other Party ("**Withholding Party**") shall promptly pay such tax, levy or charge for and on behalf of the Party to the proper governmental authority, and shall promptly furnish the Party with a signed original certificate of such tax deduction. The Withholding Party shall have the right to deduct any such tax, levy or charge actually paid from payment due by the Party or be promptly reimbursed by the Party if no further payments are due by the Party. Each Party agrees to assist the other Party in claiming exemption from such deductions or withholdings under double taxation or similar agreement or treaty from time to time in force and in minimizing the amount required to be so withheld or deducted.

**5.5 Blocked Countries.** If by reason of law, Licensee is unable to convert to US Dollars a portion of the amount due by it under this Agreement, then Licensee shall notify Ipsen in writing and Licensee shall pay to Ipsen such portion in the currency of any other country designated by Ipsen and legally available to Licensee.

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5.5.1 **Accounting.** Licensee shall maintain and shall cause its Affiliates, Sublicensees and Contractors to maintain full, true and accurate books of account containing all particulars that may be necessary for the purpose of calculating all royalties payable under this Agreement. Such books of account shall be kept at their principal place of business. Licensee, its Affiliates, Sublicensees and Contractors shall permit Ipsen, by independent qualified public accountants selected by Ipsen, to examine such books and records at any reasonable time, but not later than [ ]* following the rendering of any corresponding reports, accountings and payments pursuant to this Agreement. The foregoing right of review may be exercised only once during each [ ]* period. Such accountants may be required by Licensee, its Affiliates, Sublicensees and Contractors to enter into a reasonably acceptable confidentiality agreement, and in no event shall such accountants disclose to Ipsen any information other than such as relates to the accuracy of reports and payments made or due hereunder. The opinion of said independent accountants regarding such reports, accountings and payments shall be binding on the parties other than in the case of manifest error. Ipsen shall bear the cost of any such examination and review; provided that if the inspection and audit shows an underpayment of royalty due to Ipsen of more than [ ]* of the amount due for the applicable Accounting Period, then Licensee shall promptly reimburse Ipsen for all costs incurred in connection with such examination and review. Licensee shall promptly pay to Ipsen the amount of any such underpayment revealed by an examination and review together with late payment interest pursuant to Section 5.3.

## ARTICLE 6 DEVELOPMENT

**6.1 Transfer of Ipsen Licensed Technology and Documentation to Licensee.** The Parties agree that, promptly following the Effective Date, at the reasonable request from Licensee, Ipsen shall transfer:

- All research, pre-clinical and clinical data with respect to Licensed Products

- Research and development reports with respect to Licensed Products

- Any drug master files (or, at the request of Licensee, the right to reference any drug master file for any purposes, including any application for Regulatory Approval) with respect to Licensed Products

- Any copies of any correspondence in its possession or under its control with any Regulatory Authorities related to Licensed Products

- Copies of all documents in its possession or under its control relating to any Ipsen Know-How or Ipsen MC4 Compound
- Electronic copies of all patents and patent applications included within Ipsen Patent Rights

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- Assays, biological materials, research tools and research reagents used in relation to research and Development of any Ipsen MC4 Compound, provided that such items are only for use by Licensee to conduct research and Development activities pursuant to this Agreement
- Quantities of any Ipsen MC4 Compound, provided that Ipsen has sufficient inventory of such compound to transfer and supply such quantities, and provided, further, that such quantities are for use by Licensee to conduct research and Development activities pursuant to this Agreement

At least once each [ ]* during the Term and at such other times as License may reasonably request from time to time during the Term, Ipsen shall transfer to Licensee (i) any and all of the items listed above to the extent that they are in the possession or control of Ipsen and have not previously been transferred to Licensee and (ii) copies of all documents in Ipsen's possession or under its control relating to any Ipsen Licensed Know-How and electronic copies of all patents and patent applications included within Ipsen Licensed Patent Rights, in each case to the extent not previously transferred to Licensee.

The performance by Ipsen of its obligations under the foregoing provisions of this Section 6.1 shall be at no cost to Licensee.

From time to time during the applicable Initial Ipsen Support Period (as defined below), at the reasonable request of Licensee, Ipsen agrees to make available to Licensee, free of charge, those of Ipsen's employees and consultants that have knowledge and expertise in connection with researching, developing, obtaining regulatory approval for, or creating and prosecuting intellectual property with respect to, Licensed Products, or in connection with the research, development, use or practice of the Ipsen Technology, for purposes of facilitating the transfer of all Ipsen Technology to Licensee or the transfer of any of the items required to be transferred by Ipsen to Licensee pursuant to this Section 6.1. For purposes of this Agreement, the term "**Initial Ipsen Support Period**" shall mean a period of [ ]* commencing on [ ]*. Such [ ]* period may be extended by mutual agreement of the parties, acting reasonably and in good faith. Should a Licensed Product that is an Ipsen MC4 Product require the filing of the first IND or CTD substantially after the written request for the commencement of such applicable [ ]* period, then the Parties will make provisions to divide such [ ]* period to accommodate the potential need for staging the Ipsen support over this extended period. At Licensee's request made at any time during the Term following the expiration of the applicable Initial Ipsen Support Period, Ipsen may provide to Licensee, on a case-by-case basis, reasonable assistance with respect to knowledge and expertise in connection with research, developing, obtaining regulatory approval for, or creating and prosecuting intellectual property with respect to the Licensed Products, subject to the Parties agreeing on the scope of such assistance. Such assistance shall be charged to Licensee at the per diem rate of [ ]* for internal costs and at cost for external costs.

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**6.2 Responsibility and Decision-Making Authority; Development Costs.** Unless otherwise agreed in any definitive agreement executed by the Parties pursuant to Section 2.10, Licensee shall have the sole right, responsibility and decision-making authority for all aspects of Development of Licensed Products in the Territory, and shall bear all related costs. Notwithstanding anything express or implied in this Agreement (including, without limitation, this Section 6.2) to the contrary, Ipsen shall continue until completion certain [ ]* that are identified on Appendix C and are ongoing as of the Effective Date under its sole responsibility and decision-making authority (collectively, the "**Ipsen Ongoing Pre-Clinical Studies**").

**6.3 Development Plan.** The Parties have agreed upon the Initial Development Plan. Licensee shall update and modify the Development Plan from time to time to reflect all Development activities planned by Licensee to obtain Regulatory Approval for each Licensed Product in the Territory, as well as to include any changes or modifications planned by Licensee to such Development activities or to any other aspect of the Development Plan as in effect prior to such changes or modifications. Licensee shall provide to Ipsen a copy of each such update and modification of the Development Plan. The obligations of Licensee under this Section 6.3 with respect to each Licensed Product shall terminate upon the First Commercial Sale of such Licensed Product.

**6.4 Reports.** In addition, on [ ]* after the Effective Date and during the Term, Licensee will provide to Ipsen a written progress report that will describe the Development activities that Licensee has performed or caused to be performed during the preceding [ ]* period. The obligations of Licensee under this Section 6.4 with respect to each Licensed Product shall terminate upon the First Commercial Sale of such Licensed Product.

## ARTICLE 7 REGULATORY MATTERS AND SAFETY

**7.1 Responsibility and Decision-Making Authority for Regulatory Affairs.** Unless otherwise agreed in any definitive agreement executed by the Parties pursuant to Section 2.10, Licensee, at its own expense, shall have the sole right, responsibility and decision-making authority for all regulatory affairs in the Territory related to Licensed Product, including the preparation and filing of applications for Regulatory Approval, as well as any or all

governmental approvals required to manufacture, or have manufactured, Licensed Product. Licensee shall file all such applications in its own name or that of its Affiliate. Licensee, at its own expense, shall have the sole right and responsibility for all communications and dealings with the Regulatory Authorities in the Territory.

**7.2 Ownership of Regulatory Approvals.** Unless otherwise agreed in any definitive agreement executed by the Parties pursuant to Section 2.10, Licensee shall own all Regulatory Approval files and Regulatory Approvals in the Territory.

**7.3 Pharmaco-vigilance responsibility.** Unless otherwise agreed in any definitive agreement executed by the Parties pursuant to Section 2.10, Licensee shall be responsible for reporting to Regulatory Authorities in the Territory any adverse

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experience and safety issues for Licensed Product in compliance with the requirements of the applicable laws, rules and regulations.

**7.4 Drug Safety Database.** Unless otherwise agreed in any definitive agreement executed by the Parties pursuant to Section 2.10, Licensee shall be responsible for compiling a validated global database that captures all adverse events reported to Licensee from any source and maintaining said database.

## ARTICLE 8 MANUFACTURE AND SUPPLY

**8.1 Supply for Development.** If requested by Licensee by written notice, Ipsen shall manufacture and supply, or cause to be manufactured and supplied, [ ]* in sufficient quantities to satisfy the reasonable requirements of Licensee and its Sublicensees and Contractors for use of such [ ]* in Development activities with respect to such Licensed Product until the end of [ ]* for such Licensed Product. Ipsen's supply of [ ]* to Licensee under this Section 8.1 shall be provided at Ipsen's Manufacturing Cost. Promptly following Licensee's notice, the Parties shall enter into a clinical supply agreement and a technical agreement with respect to such clinical supplies (the "**Clinical Supply Agreements**")[(1)]. Ipsen's Manufacturing Cost will be agreed upon in the Clinical Supply Agreements (to reflect Ipsen's actual costs for manufacturing the [ ]* as well as a mechanism for adjusting such Manufacturing Cost in case of increase or decrease of any component of such Manufacturing Cost. The Clinical Supply Agreements will provide for the terms and conditions of the transfer of Ipsen's manufacturing technology at the end of [ ]*, provided, however, that the Parties agree that such transfer will be made at Licensee's cost and expense, less an amount equal to the Ipsen Manufacturing Transfer Cost, to be estimated and agreed by the parties in good faith. For the avoidance of doubt, in the event Licensee does not notify Ipsen with its request for the manufacturing by Ipsen of [ ]* pursuant to this Section 8.1, the transfer of manufacturing technology shall be made under the terms and conditions of Section 8.1. Ipsen shall not be obligated to manufacture any quantities of [ ]* pursuant to this Section 8.1 if and to the extent that such quantities will be used by Licensee or any of its Sublicensees or Contractors to make finished Licensed Product for use in [ ]*.

**8.2 Transition.** In the event Licensee does not notify Ipsen with its request for Ipsen manufacturing the [ ]* pursuant to Section 8.1, at the request of Licensee, Ipsen shall provide to Licensee a manufacturing transfer package relating to Ipsen's existing manufacturing technology of the Licensed Products no later than [ ]* from the date of request by Licensee, and Ipsen shall use [ ]* efforts to transfer to Licensee all Ipsen Licensed Know-How and methods pertaining to the manufacture of [ ]*

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(1) [ ]*

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[ ]* at Ipsen's cost and expense (the "**Ipsen Manufacturing Transfer Cost**") and Licensee shall use [ ]* efforts to understand and implement such Ipsen Licensed Know-How and methods pertaining to the manufacture of such Licensed Product.

**8.3 Commercial Supply.** Unless otherwise agreed in any definitive agreement executed by the Parties pursuant to Section 2.10, Licensee shall have the sole right, responsibility and decision-making authority for the manufacture, in accordance with good manufacturing practice, and supply of commercial quantities of Licensed Product in the Territory after receipt of Regulatory Approval therefor in the applicable jurisdiction or jurisdictions.

## ARTICLE 9 COMMERCIALIZATION

**9.1 Responsibility and Decision-Making Authority.** Unless otherwise agreed in any definitive agreement executed by the Parties pursuant to Section 2.10, Licensee, at its own expense, shall have sole right, responsibility and decision-making authority for the marketing, promotion, sale and distribution of Licensed Product in the Territory under Licensee's Regulatory Approvals.

## ARTICLE 10 INTELLECTUAL PROPERTY

**10.1 Trademarks.** Licensee shall identify and select one or more trademarks to be used to register, distribute and promote the Licensed Products in the Territory (collectively, **"Licensee Trademarks"** and each individually a **"Licensee Trademark"**) which shall not be the same or confusingly similar to any product of Ipsen. Unless otherwise agreed between the Parties, Ipsen shall not avail itself of any license on any Licensee Trademark, shall not register or use any Licensee Trademark and shall not license, register or use any other trademark or trade name which is the same as, or confusingly similar to, any Licensee Trademark in any country. Licensee shall own and, at its cost, shall be responsible for procurement, registration, maintenance and enforcement of all Licensee Trademarks used or registered in connection with any Licensed Product.

**10.2 Infringements of Trademarks.** Licensee shall have the sole right but not the obligation to initiate proceedings against, or defend claims made by, any person in connection with any Licensee Trademark. The commencement, strategies, termination, settlement or defense of any action relating to the validity or infringement of Licensee Trademarks shall be decided by Licensee. Any such proceedings shall be at the expense of Licensee. Any damages or costs recovered by Licensee as a result of any such proceedings or claims, shall be for the sole benefit and account of Licensee.

**10.3 Patent Right and Know-How Ownership**

10.3.1 Ipsen shall own all Ipsen Inventions, Licensee shall own all Licensee Inventions, and Ipsen and Licensee shall jointly own all Joint Inventions. Each Party promptly will notify the other Party in writing of (i) any Invention that the notifying Party believes is a Joint Invention and (ii) any

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Invention for which the notifying Party intends to file a patent application. Each Party shall require all of its employees and contractors to assign all Inventions made by them to such Party.

10.3.2 All right, title and interest in and to Ipsen Licensed Technology are and shall remain vested in Ipsen, subject only to any rights thereto granted by Ipsen to Licensee pursuant to this Agreement, including, without limitation, the Licensed Rights granted by Ipsen to Licensee pursuant to Section 2.1. Notwithstanding anything express or implied in the foregoing provisions of this Section 10.3.2 or elsewhere in this Agreement to the contrary, Ipsen and its Affiliates shall not sell, assign or otherwise transfer or dispose of all or any portion of their respective right, title and interest in and to Ipsen Licensed Technology without having obtained the prior agreement or consent of Licensee, unless (x) the proposed buyer, assignee or other transferee shall have, as a condition precedent to the effectiveness of any such sale, assignment or other transfer or disposition, executed an instrument in writing agreeing to assume all of the agreements and obligations under this Agreement of Ipsen and its Affiliates to the extent applicable to the Ipsen Licensed Technology, or the portion thereof, transferred to such buyer, assignee or other transferee, and (y) any such sale, assignment or other transfer or disposition shall not operate to release Ipsen and its Affiliates from any of its agreements or obligations under this Agreement.

10.3.3 All right, title and interest in and to Licensee Know-How, Licensee Patent Rights and Licensee Joint Technology Rights are and shall remain vested in Licensee.

10.3.4 Any and all Joint Know-How and Joint Patent Rights shall be owned by the Parties in equal undivided shares. Except to the extent otherwise provided elsewhere in this Agreement to the contrary (including, without limitation, the provisions of Section 2.1 pursuant to which Ipsen granted to Licensee an exclusive license to all of Ipsen's right, title and interest in and to all of the Joint Know-How and Joint Patent Rights for certain uses specified therein), each Party shall be free to use its undivided share of any and all Joint Inventions or any and all Joint Patent Rights without having to obtain the agreement or consent of the other Party, without having to provide notice of such use to the other Party and without having to make any accounting to the other Party for such use or any revenues or profits derived from such use. In addition, except to the extent otherwise provided elsewhere in this Agreement to the contrary, each Party shall be free to sell, assign, license and otherwise transfer or dispose of all or any portion of such Party's undivided share in any and all Joint Inventions or any and all Joint Patent Rights without having to obtain the agreement or consent of the other Party, without having to provide notice of such sale, assignment, license or other transfer or disposition to the other Party and without having to make any accounting to the other Party for such sale, assignment, license or other transfer or disposition or any revenues or profits derived from such sale, assignment, license or other transfer or disposition; provided, however, that (x) any buyer, assignee, licensee or other transferee of all or any portion of the Joint Inventions and Joint

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Patent Rights shall take all or the portion of the Joint Inventions and/or Joint Patent Rights so transferred subject to all of the agreements and obligations under this Agreement of the transferring Party (including, without limitation, the exclusive licenses granted by Ipsen to Licensee pursuant to Section 2.1 hereof with respect to certain uses of Ipsen's right, title and interest to the Joint Inventions and Joint Patent Rights), (y) such buyer, assignee, licensee or other transferee shall, as a condition precedent to the effectiveness of any such sale, assignment, license or other transfer or disposition, execute an instrument in writing agreeing to assume all of the agreements and obligations under this Agreement of the transferring Party to the extent applicable to the Joint Inventions or Joint Patent Rights, or the portion thereof, transferred to such buyer, assignee, licensee or other transferee, and (z) any such sale, assignment, license or other transfer or disposition shall not operate to release the transferring Party from any

of its agreements or obligations under this Agreement. Licensee may use during the Term any and all Joint Inventions and Joint Patent Rights for the purposes contemplated in this Agreement.

**10.4 Filing — Prosecution and Maintenance of Ipsen Licensed Patent Rights and Licensee Patent Rights.**

10.4.1 Ipsen shall at its own cost and expense be solely responsible for the filing, prosecution and maintenance of the Ipsen Licensed Patent Rights in the Territory, including the conduct and defense of any claims or proceedings relating to the Ipsen Licensed Patent Rights in the Territory (including but not limited to any interference, reissue or re-examination or opposition proceedings); provided, however, that Ipsen shall (i) provide Licensee with all material documentation and correspondence from, sent to or filed with patent offices in the Territory regarding the Ipsen Licensed Patent Rights, (ii) provide Licensee with a reasonable opportunity to review and comment upon all filings with such patent offices in advance of submissions to such patent offices, and (iii) shall consider, in good faith, incorporating any reasonable comments provided by Licensee with respect to any such filings. Without limiting the generality of the foregoing provisions of this Section 10.4.1, Ipsen shall at its own cost and expense file, prosecute and maintain Ipsen Licensed Patent Rights in any country in the Territory as reasonably requested by Licensee acting in a reasonable commercial manner with regards the market potential of such country, including the conduct and defense of any claims or proceedings relating to the Ipsen Licensed Patent Rights in such country (including but not limited to any interference, reissue or re-examination or opposition proceedings). If Ipsen determines in its sole discretion to abandon or not to file, prosecute or maintain any claim, patent or patent application within the Ipsen Licensed Patent Rights in any country in the Territory, including the conduct and defense of any claims or proceedings relating to such claim, patent or patent application (including but not limited to any interference, reissue or re-examination or opposition proceedings), then Ipsen shall provide Licensee with [ ]* prior written notice of such determination, and shall provide Licensee with the opportunity to file, prosecute and maintain such claim, patent or patent application in such country in the name of Licensee (or an Affiliate of

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Licensee) as assignee, including the conduct and defense of any claims or proceedings relating to such claim, patent or patent application in such country (including but not limited to any interference, reissue or re-examination or opposition proceedings), and Ipsen shall assign to Licensee its entire right in such claim, patent or patent application in such country, and thereafter Licensee shall be responsible for all costs and expenses in connection with the filing, prosecution or maintenance of any such claim, patent or patent application assigned by Ipsen to Licensee pursuant to this Section 10.4.1 and Ipsen shall not be entitled to any compensation of any kind (including, without limitation, any compensation for such assignment) in connection with any such claim, patent or patent application assigned by Ipsen to Licensee. Ipsen shall also pay for all costs and expenses in connection with any assignment by Ipsen to Licensee of any claim, patent or patent application pursuant to this Section 10.4.1. Licensee shall upon first request from Ipsen deliver to Ipsen the original of any Regulatory Approval for the purpose of applying for any supplementary protection certificates of any Ipsen Licensed Patent Rights.

10.4.2 Licensee shall at its own cost and expense be solely responsible for the filing, prosecution and maintenance of the Licensee Patent Rights, including the conduct and defense of any claims or proceedings relating to the Licensee Patent Rights in the Territory (including but not limited to any interference, reissue or re-examination or opposition proceedings).

10.4.3 Each Party will take account of the other Party's interest in the performance of its obligations under this Section 10.4. Each Party shall provide to the other all assistance reasonably requested by the other Party on all such matters (at the expense of such other Party), including agreeing to and taking all steps and executing all documents necessary to be joined as claimant or defendant in any proceedings in any country.

**10.5 Filing — Prosecution and Maintenance of Joint Patent Rights.** Unless the Parties otherwise mutually agree in writing, Licensee shall have the first right to file, prosecute and maintain the Joint Patent Rights in any and all countries of the world, including the conduct and defense of any claims or proceedings relating to the Joint Patent Rights in any and all countries of the world (including but not limited to any interference, reissue or re-examination or opposition proceedings), *provided however,* in the event that Licensee determines in its sole discretion to abandon or not to file, prosecute or maintain any claim, patent or patent application within the Joint Patent Rights in any country of the world, including the conduct and defense of any claims or proceedings relating to such claim, patent or patent application (including but not limited to any interference, reissue or re-examination or opposition proceedings), then Licensee shall provide Ipsen with [ ]* prior written notice of such determination, and Ipsen shall have such right and upon exercise of such right, Ipsen shall have the right to file, prosecute and maintain such claim, patent or patent application in such country, including the conduct and defense of any claims or proceedings relating to such claim, patent or patent application in such country (including but not limited to any interference, reissue or re-examination or opposition proceedings). In each case under this Section

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10.5, the filing Party (A) shall give the non-filing Party a reasonable opportunity to review the text of the application or submission before filing, (B) shall consult with the non-filing Party with respect thereto, (C) shall, prior to filing any application or submission, incorporate any reasonable comments that the non-filing Party shall make on a timely basis to such application or submission and (D) shall supply the non-filing Party with a copy of the application or submission as filed, together with notice of its filing date and serial number and all substantive prosecution. Each Party shall keep the other advised of the status of the actual and prospective patent filings described above in this Section 10.5 and, upon the request of the other, provide advance copies of any papers

related to the filing, prosecution and maintenance of such patent filings. Licensee shall promptly give notice to Ipsen of the grant, lapse, revocation, surrender, invalidation or abandonment in any country within the Territory of any Joint Patent Rights being prosecuted by Licensee. Ipsen shall promptly give notice to Licensee of the grant, lapse, revocation, surrender, invalidation or abandonment in any country within the Territory of any Joint Patent Rights being prosecuted by Ipsen. With respect to all filings under this Section 10.5, the filing Party shall be responsible for payment of all costs and expenses related to such filings (including, without limitation, fees and disbursements of outside legal counsel in connection with such filings), subject to prompt reimbursement from the non-filing Party for [ ]* of all of such costs and expenses. Either Party may disclaim its interest in any particular patent or patent application included in the Joint Patent Rights, in which case (X) the disclaiming Party shall assign its ownership interest in such patent or patent application to the other Party for no additional consideration, (Y) the Party which is then the sole owner shall be solely responsible for all future costs of such patent or patent application and (Z) the disclaiming Party shall hold no further rights thereunder.

**10.6 Infringement.** Each Party shall give prompt written notice to the other of any suspected or actual Infringement by a third party of all or any portion of the Ipsen Licensed Technology, Licensee Technology, Joint Inventions or Joint Patent Rights that comes to the attention of that Party during the Royalty Term with respect to any and all countries in the Territory. Licensee shall have the first right but not the obligation to initiate and pursue proceedings against such third party in connection with any such suspected or actual Infringement of all or any portion of the Ipsen Licensed Technology, Joint Inventions or Joint Patent Rights, and Licensee shall have the sole right but not the obligation to initiate and pursue proceedings against such third party in connection with any such suspected or actual Infringement of all or any portion of Licensee Technology. The commencement, strategies, termination, and settlement of any action or proceedings relating to the validity or suspected or actual Infringement of the Ipsen Licensed Technology, Joint Inventions or Joint Patent Rights, or any portion thereof, shall be decided by Licensee in consultation with Ipsen. The commencement, strategies, termination, and settlement of any action or proceedings relating to the validity or suspected or actual Infringement of Licensee Technology, or any portion thereof, shall be decided solely by Licensee without any requirement that Licensee consult with Ipsen. Any proceedings initiated and pursued by Licensee pursuant to this Section 10.6 shall be at the expense of Licensee. Nothing in this Agreement, however, shall be deemed to require Licensee to enforce all or any portion of the Ipsen Licensed Technology, Joint Inventions, Joint Patent Rights or Licensee Technology against others; provided,

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however, that if Licensee does not enforce all or any portion of the Ipsen Licensed Technology, Joint Inventions or Joint Patent Rights, Ipsen may do so at its expense and, if necessary under the relevant law of the concerned jurisdiction, in the name of Licensee as a plaintiff, unless Licensee reasonably believes that pursuit by Ipsen of any such enforcement action jeopardizes all or any portion of the Ipsen Licensed Technology, Joint Inventions or Joint Patent Rights, including the validity thereof, and sends written notice to Ipsen stating that Ipsen should not pursue any such enforcement action for this reason, in which case Ipsen shall not pursue any such enforcement action. Ipsen may not settle any proceedings or other enforcement action without the prior written consent of Licensee, which consent shall not be unreasonably withheld or delayed. At the request of the Party bringing such enforcement action or proceeding under this Section 10.6, the other Party shall cooperate reasonably with such Party, including without limitation by having such other Party agree to be named as a party if necessary to such enforcement action or proceeding, and any such reasonable cooperation by such other Party shall be at the sole cost and expense of such Party that requested such cooperation. The Party not bringing an enforcement action or proceeding under this Section 10.6 with respect to the validity or suspected or actual Infringement of Ipsen Licensed Technology, Joint Inventions or Joint Patent Rights shall be entitled to separate representation in such matter by counsel of its own choice and at its own expense. Any damages, costs or other amounts recovered in connection with any action or proceeding initiated and pursued by Licensee or Ipsen pursuant to this Section 10.6, including, without limitation, any settlement thereof, in connection with the validity or suspected or actual Infringement of Ipsen Licensed Technology, Joint Inventions or Joint Patent Rights, shall be allocated first to [ ]* and any remaining amounts shall be allocated as follows: [ ]*.

**10.7 Third party intellectual property rights**

10.7.1 Each Party shall give prompt written notice to the other of any intellectual property rights of any third party which could reasonably be considered as constituting impediment on the use of the Ipsen Licensed Technology, Joint Inventions or Joint Patent Rights in accordance with the provisions of this Agreement or on the research, development, manufacture, use, marketing, promotion, distribution, sale, import or export of Licensed Product, in which event the Parties shall agree on the strategy and procedural steps to be taken in respect of opposing and/or settling such potential impediment.

10.7.2 Each Party shall give prompt written notice to the other of claims or suits arising out of actual or alleged Infringement of Patent Rights, Know-How or other intellectual property owned by a third party, as a result of any use of the Ipsen Licensed Technology, Joint Inventions or Joint Patent Rights in accordance with the provisions of this Agreement or on the research, development,

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manufacture, use, marketing, promotion, distribution, sale, import or export of Licensed Product, in which event Licensee, subject to the provisions of Section 10.7.3, shall have the right to contest or defend such claim or suit on behalf of itself and on behalf of Ipsen. If Licensee elects to contest or defend such claim or suit, Licensee shall notify Ipsen of such election, and shall keep Ipsen fully informed of any development in such claim or suit, including by transmitting copies of all documents in such claim or suit. If Licensee contests or defends a claim or suit pursuant to this Section 10.7.2 and Ipsen has not elected to contest or defend such claim or suit subject to, and in accordance with, the provisions of Section 10.7.3, then (a)

Licensee shall control the defense of such claim or suit, (b) Ipsen shall provide assistance in the defense of such claim or suit in a reasonable and timely manner upon reasonable request of Licensee and at Licensee' sole cost and expense; and (c) Licensee shall have the right to compromise or settle such claim or suit; provided, however, that, if such claim or suit was originally made or filed against Ipsen or any of its Affiliates or pertains to any of the Ipsen Licensed Technology, Joint Patent Rights or Joint Know-How, any such compromise or settlement by Licensee of such claim or suit shall be subject to Ipsen's prior written approval, which shall not be unreasonably withheld or delayed. Notwithstanding Licensee's control of the defense of any claim or proceeding pursuant to this Section 10.7.2, Ipsen shall have the right to participate in such defense using counsel of its own choice and at its own expense, provided that such claim or proceeding was originally made or filed against Ipsen or any of its Affiliates or pertains to any of the Ipsen Licensed Technology, Joint Patent Rights or Joint Inventions.

10.7.3 If, within [ ]* after Licensee receives written notice of any such claim or suit, Licensee elects not to contest or defend, or fails to notify Ipsen of its intent to contest to or defend, such claim or suit, then Ipsen shall have the right to contest or defend such claim or suit on behalf of itself and Licensee and shall keep Licensee fully informed of any development in such claim or suit, including by transmitting copies of all documents submitted in such claim or suit. Notwithstanding any of the foregoing provisions of this Section 10.7.3 to the contrary, Ipsen's right under this Section 10.7.3 to contest or defend such claim or suit shall apply only if either (i) such claim or suit was originally made or brought against Ipsen or any of its Affiliates or (ii) such claim or suit pertains to any of the Ipsen Licensed Technology, Joint Patent Rights or Joint Inventions. If Ipsen contests or defends a claim or suit pursuant to this Section 10.7.3, then (a) Ipsen shall control the defense of such claim or suit, (b) Licensee shall provide assistance in the defense of such claim or suit in a reasonable and timely manner upon reasonable request of Ipsen and at Ipsen's sole cost and expense and (c) Ipsen shall have the right to compromise or settle such claim or suit; provided, however, that such compromise or settlement shall be subject to Licensee's prior written approval, which shall not be unreasonably withheld or delayed. Notwithstanding Ipsen's control of the defense of any such claim or proceeding, Licensee shall have the right to participate in such defense using counsel of its own choice and at its own expense.

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10.7.4 The defending Party shall bear its own costs and expenses (including, without limitation, attorneys fees and court costs) in connection with the defense of any claim or suit pursuant to Section 10.7.2 or Section 10.7.3, and the defending Party shall also bear the costs and expenses of the other Party if and to the extent that such costs and expenses were incurred by such other Party in connection with reasonable assistance provided by such other Party in connection with such defense at the request of the defending Party.

10.7.5 In the event that, in connection with the defense of any claim or suit pursuant to this Section 10.7 or any settlement thereof, the defending Party shall receive damages, costs or other amounts, such damages, costs or other amounts shall be treated in the manner contemplated under Section 10.6 as if they had been received by the defending Party in connection with any action or proceeding initiated and pursued by the defending Party pursuant to Section 10.6 above.

10.7.6 The provisions of this Section 10.7 and the respective rights and obligations of the Parties under this Section 10.7 shall be without prejudice to any of the provisions of Article 15 or any of the respective rights and obligations of the Parties under Article 15.

**10.8 Patent Notices.**

All notices provided under this Article 10 to Licensee shall be given to:

RHYTHM METABOLIC, INC.
855 Boylston Street, 11th Floor
Boston MA 02116
Attn: Bart Henderson, President

with a copy to:

Bingham McCutchen LLP
One Federal Street
Boston, Massachusetts U.S.A. 02110
Attn: Julio E. Vega, Esq.

All notices provided under this Article 10 to Ipsen shall be given to:

IPSEN PHARMA SAS.
65 Quai Georges Gorse
92100 Boulogne-Billancourt, France
Attn: Head, Patent Law

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With a copy to :

BIOMEASURE INC.
27 Maple Street
Milford, Massachussetts
01757-3650 USA
Attn : Patent Department

**ARTICLE 11 CONFIDENTIAL INFORMATION**

**11.1 Non-Disclosure and Non-Use.** In performing under this Agreement, the Parties will share proprietary information ("**Confidential Information**") with each other. For the purpose of this Section 11.1, any terms of this Agreement shall be considered as Confidential Information of both Parties. A Party receiving Confidential Information under this Agreement ("**Receiver**") from the other disclosing Party ("**Discloser**") shall maintain such Confidential Information as follows:

The Receiver of a given item of Confidential Information agrees:

· not to use such Confidential Information for any purpose other than in connection with the purpose of carrying out this Agreement;

· to treat such Confidential Information as it would for its own confidential information of the same nature and importance; and

· to take all reasonable precautions to prevent the disclosure of such Confidential Information to any third party without the prior written consent of the Discloser, except to the extent otherwise permitted pursuant to Section 11.3 below.

**11.2 Exceptions.** A Receiver shall be relieved of any and all obligations under Section 11.1 regarding Confidential Information which:

· was known to the Receiver or its Affiliates prior to receipt hereunder or under any confidentiality agreements signed prior to the Effective Date between the Parties; or

· as demonstrated by the Receiver by competent written proof, is independently generated by the Receiver or its Affiliates by persons who have not had access to or knowledge of the Confidential Information disclosed hereunder; or

· at the time of disclosure by the Discloser to the Receiver, was generally available to the public, or which after disclosure hereunder becomes generally available to the public through no fault attributable to the Receiver, or its Affiliates or sublicensees; or

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· is hereafter made available to the Receiver or its Affiliates for use and unrestricted disclosure by the Receiver from any third party having a right to do so.

**11.3 Authorized Disclosure.**

11.3.1 Nothing in this Agreement shall prohibit disclosure by a Receiver of Confidential Information to its (i) Affiliates, directors, employees, consultants, advisors or clinical investigators, (ii) potential or actual sublicensees, Contractors, assignees, lenders or investors, or (iii) other third parties, if any, but in each case only on a strict need to know basis for purposes of (x) carrying out, or causing to be carried out, any of the provisions of this Agreement, (y) the exercise or transfer by such Receiver of any of its rights under this Agreement, and (z) providing for the delegation of any of the obligations of such Receiver under this Agreement; provided, however, that any such person to whom such disclosure is made is bound by confidentiality obligations that are no less stringent than the confidentiality obligations of the Parties under this Article 11 (except that the duration of such confidentiality obligations shall be for a period not to exceed [ ]* from the time of disclosure to such person of Confidential Information).

11.3.2 The restrictions set forth in this Article 11 shall not prevent either Party from disclosing any Confidential Information to government agencies to the extent reasonably necessary to file for, prosecute or maintain Patent Rights or to seek Regulatory Approval for any Licensed Product.

The restrictions set forth in this Article 11 shall not prevent disclosure to the extent required by law or pursuant to a judicial or governmental order, provided that the Receiver makes reasonable efforts to minimize the extent of any required disclosure and gives the Discloser sufficient notice to permit the Discloser to seek a protective order or other similar order with respect to such Confidential Information, with Receiver's reasonable assistance therefor.

**11.4 Survival.** This Article 11 shall survive any termination or expiration of this Agreement for a period of [ ]*.

**ARTICLE 12 PUBLICATION AND PRESS RELEASE**

**12.1 Publications.** Neither Party shall publish or publicly present the results of studies carried out under this Agreement to the extent that such publication or such results include information provided to the publishing or presenting Party by the other Party, unless and until the publishing or presenting Party shall have provided the other Party with the opportunity for prior review of such publication or results in accordance with the provisions set forth below in this Section 12.1. Notwithstanding the foregoing or any other provision to the contrary in this Section 12.1, Ipsen shall not publish or publicly present the

results of studies carried out under this Agreement by Licensee, its Affiliates, Sublicensees or Contractors. For purposes of this Section 12.1, the term **"Publication Eligible Material"** shall mean any proposed abstracts, manuscripts or presentations

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(including verbal presentations) that (i) relate to any Licensed Product, (ii) are proposed to be published or publicly presented by either Party and (iii) contain information provided to the publishing or presenting Party by the other Party. Each Party agrees to provide the other Party the opportunity to review any Publication Eligible Material that such Party proposes to publish or publicly present at least [ ]* prior to their intended submission for publication and agrees, upon request, not to submit or publicly present any such Publication Eligible Material until the other Party is given a reasonable period of time (not to exceed [ ]*) to secure patent protection for any material in such publication or presentation that is owned by the non-publishing Party (either individually or jointly with the publishing Party) and which the non-publishing Party believes to be patentable. Neither Party shall have the right to publish or publicly present Confidential Information of the other Party, and each Party shall remove the Confidential Information of the other Party from any proposed publication or presentation upon request by such other Party. Nothing contained in this Section 12.1 shall prohibit the inclusion of information necessary to file a patent application with a government authority, except for Confidential Information of the non-filing Party, provided the non-filing Party is given a reasonable opportunity to review the information to be included prior to submission of such patent application. Notwithstanding the foregoing, the Parties recognize that independent investigators have been engaged, and will be engaged in the future, to conduct clinical trials of Licensed Products. Such independent investigators are understood to operate in an academic environment and shall be allowed to release information regarding such studies in a manner consistent with academic standards. In the event that either Party submits any manuscript or other publication relating to any Licensed Product, it will consider and acknowledge the contributions of the other Party, including, as appropriate, co-authorship.

**12.2 Press Release; Public Disclosure of Agreement.** The Parties shall issue a mutually agreed upon joint press release at an agreed date promptly following the execution of this Agreement. Ipsen and Licensee will jointly discuss and agree in writing on any statement to the public regarding this Agreement or any of its terms, subject in each case to disclosure otherwise required by law or regulation as determined in good faith by each Party. When a Party elects to make any such statement it will give the other Party at least [ ]* notice to the other Party to review and comment on such statement.

**12.3 Use of Ipsen's name.** Licensee shall not use Ipsen's name (or any of the names of Ipsen's Affiliates) in any communication to third parties, whether oral or written, without Ipsen's prior written approval.

**12.4 Non-Disclosure of Termination Event.** In the event of a termination of this Agreement by Licensee under Section 14.3, Licensee will not disclose or cause to be disclosed to any third party the facts or circumstances regarding such termination, except for any such disclosure which is required by law (including if requested by any regulatory agency, taxing authority or commission of competent jurisdiction). As part of its obligation under this Section 12.4, except as is required by law (including if requested by any regulatory agency, taxing authority or commission of competent jurisdiction), Licensee will not (i) issue any press release with respect to the facts or circumstances

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regarding termination of this Agreement under Section 14.3 or (ii) respond to press inquiries with respect to the facts or circumstances regarding such termination, other than responses which are materially consistent with public disclosure regarding the same by Ipsen. For purposes of clarity, nothing in this Section 12.4 shall prevent or restrict Licensee from disclosing or causing to be disclosed publicly or to any third party the fact that Licensee has terminated this Agreement for any reason or no reason if and when such termination has in fact occurred. In addition, notwithstanding anything express or implied in this Section 12.4 to the contrary, Licensee shall be free to disclose the facts or circumstances regarding any termination of this Agreement by Licensee under Section 14.3 to any third party to whom Licensee is entitled to disclose Confidential Information of Ipsen pursuant to Section 11.3 (it being understood that, for purposes of this sentence and the provisions of Section 11.3, such facts and circumstances shall be treated as Confidential Information of Ipsen).

## ARTICLE 13 REPRESENTATIONS, WARRANTIES AND COVENANTS

**13.1 Mutual Representations and Warranties.** Each Party hereby represents and warrants as follows:

(a) It is a corporation duly organized, validly existing and in good standing under the laws of the jurisdiction in which it is incorporated, and has full corporate power and authority and the legal right to own and operate its property and assets and to carry on its business as it is now being conducted and as contemplated in this Agreement, including, without limitation, the right to grant the licenses it is granting hereunder.

(b) On the Effective Date, (i) it has the full right and authority to enter into this Agreement and perform its obligations hereunder, (ii) it is not aware of any impediment that would prevent it from entering into the Agreement or that would inhibit its ability to perform its obligations under this Agreement, (iii) it has taken all necessary corporate action on its part required to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder, and (iv) this Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid and binding obligation of such Party that is enforceable against it in accordance with its terms.

(c) It has not entered into any agreement with any third party that is in conflict with the rights granted to the other Party under this Agreement, and has not taken any action that would in any way prevent it from granting the rights granted to the other Party under this Agreement, or that would otherwise materially conflict with or materially adversely affect the rights granted to the other Party under this Agreement. Its performance and execution of this Agreement will not result in a breach of any other contract to which it is a party.

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(d) On the Effective Date, it is not aware of any action, suit, inquiry or investigation instituted by any third party that questions or threatens the validity of this Agreement.

(e) All necessary consents, approvals and authorizations of all governmental authorities and other persons or entities required to be obtained by such Party in connection with the execution, delivery and performance of this Agreement have been obtained.

(f) To the best of its knowledge, each Party has, on the Effective Date, the right to grant to the other Party the rights and licenses granted by such Party to the other Party pursuant to this Agreement.

(g) Each Party has, on the Effective Date, the necessary qualified personnel, equipment, technical know-how and other means to perform its duties under this Agreement in a timely manner in accordance with the terms hereof.

**13.2 Ipsen Representations and Warranties**. Ipsen warrants and represents that:

(a) Ipsen is the owner of the Ipsen Technology that exists on the Effective Date, free and clear (on the Effective Date) of all liens or security interests. On the Effective Date, neither Ipsen nor any of its Affiliates is aware of any right or license of any third party that is required and has not been obtained by Ipsen to permit Ipsen to perform its obligations under this Agreement in accordance with the terms of this Agreement or to permit Licensee to exercise its rights hereunder in accordance with the terms of this Agreement.

(b) On the Effective Date, Ipsen is the co-owner of the [ ]* Patent Application, free and clear of all liens or security interests.

(c) On the Effective Date, neither Ipsen nor any of its Affiliates owns, controls or otherwise has the right to use or practice any rights under any patent or patent application that are not included in the Ipsen Patent Rights on the Effective Date and that would be necessary to the research, Development, manufacture, marketing, promotion, use, sale, import or export of Licensed Products.

(d) On the Effective Date, neither Ipsen nor any of its Affiliates has received notice from any third party of the existence or pendency of any claims asserting that the Ipsen Licensed Technology Infringes the rights of any third party.

(e) On the Effective Date, neither Ipsen nor any of its Affiliates has given any notice to any third party asserting Infringement by such third party of all or any portion of the Ipsen Licensed Technology and neither Ipsen nor any

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of its Affiliates is not aware (without conducting any special investigation for purposes of making this representation and warranty) of any such Infringement.

(f) On the Effective Date, neither Ipsen nor any of its Affiliates is a party to any contract or agreement with a third party (other than [ ]* with respect to the Ipsen [ ]* Patent Rights) pursuant to which Ipsen or any of its Affiliates licensed-in or otherwise acquired or has the right to use the Ipsen Licensed Technology. Neither Ipsen nor any of its Affiliates is on the Effective, or will become at any time during the Term, a party to any contract or agreement with a third party pursuant to which Licensee (or any of Licensee's Affiliates, Sublicensees or Contractors) is or will be required to make payments on account of the use, practice or exploitation of all or any portion of the Ipsen Licensed Technology.

(g) Ipsen has disclosed to Licensee (i) the results of all preclinical and clinical testing in the possession or control of Ipsen or any of its Affiliates or that are known to Ipsen or any of its Affiliates on the Effective Date; and (ii) all information in the possession or control of Ipsen or any of its Affiliates or that is known to Ipsen or any of its Affiliates on the Effective Date concerning [ ]*. Ipsen has not withheld any information that, in Ipsen's reasonable judgment, is material to this transaction. All information and data disclosed by Ipsen to Licensee are complete and accurate in all material respects.

(h) On the Effective Date, there is no litigation pending or, to the knowledge of Ipsen and its Affiliates, threatened against Ipsen or any of its Affiliates with respect to all or any portion of the Ipsen Licensed Technology.

(i) On or prior to the Effective Date, neither Ipsen nor any of its Affiliates has entered into any agreement with a third party pursuant to which Ipsen or any of its Affiliates shall have agreed not to enforce any right of Ipsen or any of its Affiliates to preclude such third party from using or practicing any or all of the Ipsen Licensed Technology.

(j) Except for the Patent Rights set forth on Appendix A, as of the date of this Agreement, neither Ipsen nor any of its Affiliates own or Control as of the date of this Agreement, or will own or Control at any time after the date of this Agreement, any Patents Rights that claim any Ipsen MC4 Program Invention.

(k) That the representation set forth in Section 13.2(k) of the Original Agreement was true and correct as of the Effective Date.

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**13.3 Licensee Representations and Warranties.** Licensee warrants and represents that as of the Effective Date, Licensee did not knowingly withhold any material information related to the Ipsen Patent Rights with regards to third party intellectual property rights.

**13.4 No Other Representations or Warranties.** EXCEPT AS EXPRESSLY PROVIDED IN THIS AGREEMENT OR IN ANY OTHER WRITTEN AGREEMENT BETWEEN THE PARTIES, THE FOREGOING REPRESENTATIONS AND WARRANTIES ARE IN LIEU OF, AND EACH PARTY EXPRESSLY DISCLAIMS, ANY AND ALL REPRESENTATIONS AND WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF DESIGN, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE.

**13.5 Mutual Covenants.** Each Party covenants the following:

(a) That it shall comply in all material respects with all federal, state, provincial, territorial, governmental and local laws, rules and regulations applicable to the development, manufacture and commercialization of Licensed Products by such Party.

(b) That it shall disclose immediately to the other Party all information in its possession or control and as to which it becomes aware concerning side effects, injury, toxicity or sensitivity reaction and incidents or severity thereof with respect to Licensed Products.

## ARTICLE 14 TERM AND TERMINATION

**14.1 Term.**

This Agreement is entered into for a period commencing on the Effective Date and, unless this Agreement is terminated sooner as provided in this Article 14, ending, on a country-by-country basis and on a Licensed Product-by-Licensed Product basis, on the expiration of the applicable Royalty Term (the "**Term**"). Upon expiration of the Term of this Agreement, the Licensed Rights granted by Ipsen to Licensee pursuant to Section 2.1 hereof, to the extent they remain in full force and effect at the time of such expiration, shall thereafter become irrevocable, perpetual and fully paid-up exclusive licenses and shall survive such expiration of the Term of this Agreement.

**14.2 Breach.** A Party ("**Non-Breaching Party**") shall have the right, in addition to any other rights and remedies, to terminate this Agreement in the event the other Party ("**Breaching Party**") is in breach of any of its material obligations under this Agreement. The Non-Breaching Party shall provide written notice to the Breaching Party, which notice shall identify the breach. The Breaching Party shall have a period of [ ]* after such written notice is provided to cure such breach. If such breach is not cured within the relevant period, this Agreement shall terminate. The waiver by either Party of any breach of any term or condition of this Agreement shall not be deemed a waiver as to any subsequent or similar breach. The right to terminate this Agreement

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under this Section 14.2 is in addition to any other right and protection that may otherwise be available as a result of a breach, including, without limitation, the right to damages.

**14.3 Voluntary Termination.** Licensee may terminate the Agreement for any reason or no reason (including, without limitation, any decision by Licensee to discontinue Development) and at any time by giving Ipsen one hundred eighty (180) days prior written notice. Such 180 day notice period may be reduced by Ipsen, on a Licensed Product-by Licensed Product basis, in the event Ipsen has identified a new licensee for one or more Licensed Products before the expiration of such 180 day notice period.

**14.4 Ipsen Right to Voluntarily Terminate.**

14.4.1 Ipsen shall have the unilateral right to terminate this Agreement in its entirety, upon written notice to Licensee with immediate effect, if Licensee, its Affiliates or Sublicensees in any country of the world brings an action or proceeding seeking to have an Ipsen License Patent Right declared invalid or unenforceable.

14.4.2 In case that Licensee does not Develop a Licensed Product or does not continue the Development of a Licensed Product already in Development, in either case both directly and indirectly (through an Affiliate, Sublicensee or Contractor), then Licensee shall so inform Ipsen and Ipsen shall have the unilateral right to terminate this Agreement with respect to such Licensed Product upon written notice to Licensee with immediate effect. In the event of early termination of this Agreement with respect to any Licensed Product pursuant to this Section 14.4.2, (A) all Licensed Rights granted by Ipsen to Licensee pursuant to Section 2.1 hereof with respect to such Licensed Product shall terminate and Ipsen Licensed Know-How and Ipsen Licensed Patent Rights with respect to such Licensed Product shall revert back to Ipsen at no cost to Ipsen and (B) all Licensee IP (as defined in Section 14.6 hereof) with respect, and to the extent it pertains, to such Licensed Product shall be licensed to Ipsen or its designee, at Ipsen's request, pursuant to a written agreement to be negotiated in good faith by the Parties whereby Ipsen will compensate Licensee for such license of Licensee IP. Any such written agreement shall also provide that Ipsen will assume any and all obligations of Licensee to third parties relating to such Licensee IP. In the event the Parties cannot reach an agreement on the terms of such written agreement, the Parties agree to refer this matter to arbitration as per Article 16. Notwithstanding anything express or implied in this Section 14.4.2 to the contrary, the parties agree that, so long as Licensee is actively engaged in finding a partner or Sublicensee to Develop any Licensed Product or to continue Development of any Licensed Product already in Development and can make the reasonable demonstration of such active out-licensing activities, the provisions of this Section 14.4.2 shall not be applicable to such Licensed Product.

**14.5 Bankruptcy**. Except if and to the extent otherwise provided under applicable law, either Party shall have the right to terminate this Agreement upon written notice to the other Party if such other Party is generally unable to meet its debts when

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due, or makes a general assignment for the benefit of its creditors, or there shall have been appointed a receiver, trustee or other custodian for such other Party for all or a substantial part of its assets, or any case or proceeding shall have been commenced or other action taken by or against such other Party in bankruptcy or seeking the reorganization, liquidation, dissolution or winding-up of such other Party or any other relief under any bankruptcy, insolvency, reorganization or other similar act or law, and any such event shall have continued for sixty (60) days undismissed, unstayed, unbonded and undischarged. Any termination of this Agreement pursuant to this Section 14.5 shall be effective immediately upon the delivery by the terminating Party of the written notice of termination contemplated above in this Section 14.5.

**14.6 Consequences of Early Termination**. In any event of early termination of this Agreement other than due to early termination by Licensee on account of material breach by Ipsen of any of its obligations under this Agreement, (A) all Licensed Rights granted by Ipsen to Licensee pursuant to Section 2.1 hereof shall terminate and Ipsen Licensed Know-How and Ipsen Licensed Patent Rights shall revert back to Ipsen at no cost for Ipsen and (B) all Licensee Know-How, Licensee Patent Rights and Licensee Joint Technology including without limitation preclinical, clinical and manufacturing data and improvements of Licensee with respect to Licensed Products, as well as all of the then ongoing development activities and manufacturing Know-How with respect to any Licensed Product ("**Licensee IP**"), shall be licensed to Ipsen or its designee, at Ipsen's request, pursuant to a written agreement to be negotiated in good faith by the Parties whereby Ipsen will compensate Licensee for such license of Licensee IP. Any such written agreement shall also provide that Ipsen will assume any and all obligations of Licensee to third parties relating to such Licensee IP. In the event the Parties cannot reach an agreement on the terms of such written agreement, the Parties agree to refer this matter to arbitration as per Article 16.

**14.7 Other Consequences of Early Termination. Upon termination of this Agreement**:

14.7.1 Licensee shall:

14.7.1.1 make its personnel reasonably available to Ipsen as necessary to effect an orderly transition of development and commercial responsibilities, with the reasonable cost of such personnel to be borne by Ipsen for such services; and

14.7.1.2 assign and transfer to Ipsen, and execute all such documents as may be reasonably required to transfer hereunder, all of Licensee's right, title and interest in the following to the extent they pertain to Licensed Products:

- all regulatory filings (such as INDs), Regulatory Approvals, clinical trial agreements (to the extent assignable and not cancelled), provided however that the responsibility for interacting with the applicable regulatory authorities in connection with the assignment and transfer

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of such regulatory filings, Regulatory Approvals and clinical trial agreements and the preparation of the documentation necessary to such assignment and transfer shall be Ipsen's; and

- all customer lists, marketing and promotional material, and all other documentation related to marketing, sale, and promotion of the Licensed Product in the Territory, and

- all trademarks used for Licensed Product, provided however that the responsibility of preparing and filing of the documents for the recordation of the assignments with the competent authorities in each applicable country and any action required ancillary, shall be borne by Ipsen and that each Party shall bear its expenses caused by its activities in connection with the assignments and transfer of the trademarks.

14.7.1.3 subject to, and in accordance with, the provisions of Section 14.6 hereof regarding Licensee IP, assign and transfer to Ipsen, and execute all such documents as may be reasonably required to transfer hereunder, all of Licensee's right, title and interest in the following to the extent they pertain to Licensed Product:

· all drug master files and related manufacturing data in connection with Licensed Product; and

· all data, including formulation data, results, clinical trial data, support documentation having arisen out of the materials and other information, in Licensee's possession and control related to Licensed Product in the Territory.

14.7.2 subject to, and in accordance with, the provisions of Section 14.6 hereof regarding Licensee IP, Licensee shall initiate transfer (and complete the same in a timely manner), to Ipsen of all technical and industrial know how related to the manufacturing of Licensed Product for use by Ipsen and shall provide reasonable assistance and support (up to a reasonable number of person-days of qualified personnel) as may be reasonably required by Ipsen to be in a position to make Licensed Product itself. Any such transfer under this Section 14.7.2 shall be at Ipsen's expense except in the case of early termination of this Agreement resulting from Licensee's material breach in which case any such transfer shall be at Licensee's sole cost and expense.

14.7.3 All licenses granted by Ipsen to Licensee under this Agreement shall terminate on the effective date of termination. Notwithstanding anything in this Section 10.7.3 or elsewhere in this Agreement to the contrary, Ipsen may authorize Licensee for a period not exceeding [ ]* to continue making, marketing, promoting and selling Licensed Product in the Territory after the termination of such licenses.

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14.7.4 No compensation or refund shall be due by either Party to the other Party, otherwise than damages as determined by a court of competent jurisdiction and compensation that may be due by Ipsen to Licensee as contemplated under Section 14.6.

14.7.5 Licensee shall agree to take such actions and execute such instruments, agreements and documents as are necessary to effect the foregoing.

14.7.6 Unless otherwise agreed by the Parties, the termination of this Agreement shall cause the automatic termination of all ancillary agreements related hereto, including, but not limited to, the Clinical Supply Agreements.

**14.8 Survival of Sublicenses.** Notwithstanding anything express or implied in this Article 14 or elsewhere in this Agreement to the contrary, each Sublicense Agreement shall survive any termination of this Agreement and shall continue in full force and effect in accordance with the respective terms thereof, provided that (i) the applicable Sublicensee shall not be in material breach of such Sublicense Agreement and (ii) the terms of such Sublicense Agreement permit Ipsen to replace Licensee as a party under such Sublicense Agreement upon any such termination of this Agreement and that such Sublicense Agreement and its terms conform with all of the requirements therefor set forth in this Agreement.

**14.9 Accrued Rights; Surviving Rights and Obligations.** Expiration or termination of this Agreement, for any reason, will not relieve either Party of any obligation accruing prior to such expiration or termination. Articles 1, 11, 12, 13, 14, 15, 16 and 17 and Section 5.5.1 shall survive expiration or termination of this Agreement. In addition, the obligations and rights of any other provisions of this Agreement, which by their nature of the provision and the nature of the termination or expiration, are intended to survive, shall survive and continue to be enforceable.

## ARTICLE 15 INDEMNIFICATION

**15.1 Indemnification by Ipsen.** Ipsen agrees to indemnify, hold harmless and defend Licensee and its Affiliates and their respective directors, officers, employees and agents (collectively, the **"Licensee Indemnitees"**) from and against any and all suits, claims, actions, demands, liabilities, expenses and/or loss, cost of defense (including without limitation reasonable attorneys' fees, court costs, witness fees, damages, judgements, fines and amounts paid in settlement) and any other amounts (collectively, **"Losses"**) that any Licensee Indemnitee becomes legally obligated to pay to a third party, because of any claim or claims against such Licensee Indemnitee to the extent that such claim or claims arise out of or resulted from (i) a material breach of a representation or warranty or covenant by Ipsen under Article 13; (ii) a material breach by Ipsen of any of its obligations under this Agreement or the Clinical Supply Agreements; (iii) the manufacture by or on behalf of Ipsen of any Licensed Product and the supply thereof to Licensee or any of its Affiliates, Sublicensees or Contractors pursuant to this Agreement or the Clinical Supply Agreements; (iv) the use, research, or handling of any Licensed Product, by or on behalf of Ipsen or any of its Affiliates, licensees, sublicensees,

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distributors or contractors, or any of their respective employees or agents; or (iv) the gross negligence or willful misconduct of Ipsen or any of its Affiliates or contractors, or any of their respective employees or agents; provided, however, that Ipsen shall not be required to indemnify the Licensee Indemnitees for any Losses pursuant to this Section 15.1 to the extent that (1) such Losses arise from Licensee's material breach of any of its obligations under this Agreement or the Clinical Supply Agreements, (2) such Losses arise or result from the gross negligence or willful misconduct of Licensee or any of its Affiliates or Contractors, or any of their respective employees or agents, or (3) Ipsen's liability for such Losses is limited pursuant to Section 5.4.

**15.2 Indemnification by Licensee.** Licensee agrees to indemnify, hold harmless and defend Ipsen and its Affiliates and their respective directors, officers, employees and agents (collectively, the **"Ipsen Indemnitees"**) from and against any and all Losses that any Ipsen Indemnitee becomes legally obligated to pay to a third party, because of any claim or claims against such Ipsen Indemnitee to the extent that such claim or claims arise out of or resulted from (i) a material breach of a representation or warranty or covenant by Licensee under Article 13, (ii) a material breach by Licensee of any of its obligations under this Agreement or the Clinical Supply Agreements, (iii) the making, use, research, development, handling or commercialization of any Licensed Product by or on behalf of Licensee or any of its Affiliates, Sublicensees or Contractors, or any of their respective employees or agents or (v) the gross negligence or willful misconduct of Licensee or its Affiliates or Contractors, or any of their respective employees or agents; *provided, however,* that Licensee shall not be required to indemnify the Ipsen Indemnitees for any Losses pursuant to this Section 15.2 to the extent that (1) such Losses arise from Ipsen's material breach of any of its obligations under this Agreement or the Clinical Supply Agreements, (2) such Losses arise or result from the gross negligence or willful misconduct of Ipsen or any of its Affiliates or contractors, or any of their respective agents or employees, (3) such Losses arise or result from the manufacture and supply of Licensed Product by or on behalf of Ipsen pursuant to this Agreement or the Clinical Supply Agreements, (4) such Losses arise or result from any Infringement of the patent rights or other intellectual property rights of any third party as a result of the use or practice of Ipsen Licensed Technology by Licensee or any of its Affiliates, Sublicensees or Contractors in accordance with the provisions of this Agreement or (5) Licensee's liability for such Losses is limited pursuant to Section 15.4.

**15.3 Procedure.** In the event of a claim by a third party against any person entitled to indemnification under this Agreement ("**Indemnified Person**"), the Indemnified Person shall promptly notify the Party having the indemnification obligation under this Agreement with respect to such claim (such Party, the "**Indemnifying Party**") in writing of the claim. The indemnifying Party shall have the right to assume the defense of any such third party claim for which it is obligated to indemnify the Indemnified Person under this Article 15. The Indemnified Person shall cooperate with the Indemnifying Party (and its insurer) as the Indemnifying Party may reasonably request, and at the Indemnifying Party's sole cost and expense. The Indemnified Person shall have the right to participate, at its own expense and with counsel of its choice, in the defense of any claim or suit that has been assumed by the Indemnifying Party. The Indemnifying Party shall have no obligation to indemnify an Indemnified Person in

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connection with any settlement made without the Indemnifying Party's prior written consent. If the Parties cannot agree as to the application of this Article 15 to any third party claim, the Parties may conduct separate defenses of such claims, with each Party retaining the right to claim indemnification from the other in accordance with this Article 15 upon resolution of the underlying claim.

**15.4** NOTWITHSTANDING ANYTHING EXPRESS OR IMPLIED IN THIS AGREEMENT TO THE CONTRARY, IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER PARTY FOR [ ]* ARISING OUT OF THIS AGREEMENT.

## ARTICLE 16 DISPUTE RESOLUTION AND GOVERNING LAW

**16.1 Disputes.** Unless otherwise set forth in this Agreement, in the event of a dispute arising under this Agreement between the Parties, the Parties shall remain bound by the terms of this Agreement and each Party shall refer such dispute to one executive officer, and such executive officer shall attempt in good faith to resolve such dispute.

**16.2 Arbitration.** If the Parties are unable to resolve a given dispute pursuant to Section 16.1 within [ ]* of referring such dispute to the executive officers, the Parties shall remain bound by the terms of this Agreement and either Party may have the given dispute settled by binding arbitration in the manner described below:

**16.3 Arbitration Request.** If a Party intends to begin an arbitration to resolve a dispute arising under this Agreement, such Party shall provide written notice (the "**Arbitration Request**") to the other Party of such intention and the issues for resolution.

**16.4 Additional Issues.** Within [ ]* after the receipt of the Arbitration Request, the other Party may, by written notice, add additional issues for resolution.

**16.5 Arbitration Procedure.** Any arbitration to resolve a dispute arising under this Agreement shall be a final and binding arbitration pursuant to the then-current Rules of Arbitration of the International Chamber of Commerce as hereinafter provided:

16.5.1 The Arbitration Tribunal shall consist of three (3) arbitrators. Each party shall nominate one (1) arbitrator and the two (2) arbitrators so named will then jointly appoint the third arbitrator as chairman of the Arbitration Tribunal. If one Party fails to nominate its arbitrator or, if the parties' arbitrators cannot agree on the person to be named as chairman within [ ]*, the International Chamber of Commerce shall make the necessary appointments for arbitrator or chairman in accordance with the Rules of Arbitration of the International Chamber of Commerce.

16.5.2 The place of arbitration shall be in London, England, and the arbitration proceedings shall be held in English. The procedural law of the place of arbitration shall apply where the said Rules are silent.

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16.5.3 The award of the Arbitration Tribunal shall be final and judgment upon such an award may be entered in any competent court or application may be made to any competent court for juridical acceptance of such an award and order of enforcement.

16.5.4 Notwithstanding the referral of any dispute, controversy or claim arising out of or in connection with this Agreement to arbitration pursuant to this Section 16.5, both Parties shall remain free to seek interim, injunctive or conservatory relief, provided that the order of the relevant judicial authority shall not in any way prejudice the above tribunals' power to settle the dispute referred to them in accordance with the Rules of Arbitration of the International Chamber of Commerce.

**16.6 Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the State of New York, U.S.A., without reference to its choice of laws principles, and shall not be governed by the United Nations Convention of International Contracts on the Sale of Goods (the Vienna Convention).

## ARTICLE 17 MISCELLANEOUS

**17.1 Agency - Independent Contractor.** Neither Party is an employee, agent or representative of the other Party for any purpose, and this Agreement shall not create or establish an employment, agency or any other relationship. Except as may be specifically provided herein, neither Party shall have any right, power, or authority, nor shall they represent themselves as having authority to assume, create or incur any expense, liability or obligation, express or implied, on behalf of the other Party, or otherwise act as an agent for the other Party for any purpose. The Parties agree that the relationship of Ipsen and Licensee established by this Agreement is that of independent licensee and licensor. This Agreement does not, is not intended to, and shall not be construed to, establish a partnership or joint venture.

**17.2 Entire Agreement.** This Agreement, including all appendices, schedules and attachments, embodies the entire understanding of the Parties with respect to the subject matter hereof and supersedes all previous communications, representations or understandings, and agreements, whether oral or written, between the Parties relating to the subject matter hereof.

**17.3 Assignment.** Except to the extent otherwise expressly provided elsewhere in this Agreement, either Party may assign this Agreement or any of such Party's rights and obligations under this Agreement to any of its Affiliates or any third party, provided that the rights and obligations of the Parties under this Agreement shall be binding upon and inure to the benefit of the successors and assigns of the Parties and that an assignment or delegation of this Agreement by a Party or of any of a Party's obligations under this Agreement shall not operate to release such Party from any of its obligations under this Agreement or from the specific obligation assigned or delegated by such Party. Any assignment not in accordance with this Agreement shall be void.

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**17.4 Notices.** Any notice or other communication under this Agreement, unless otherwise specified, shall be in writing and provided when delivered to the addressee at the address listed below (a) on the date of delivery if delivered in person or (b) three (3) days after mailing to the other Party by express mail or overnight delivery service, which obtains a signed receipt:

In the case of Ipsen:

IPSEN PHARMA SAS
65 Quai Georges Gorse
92100 Boulogne Billancourt - FRANCE
Attn.: General Counsel

In the case of Licensee:

RHYTHM METABOLIC, INC.
855 Boylston Street, 11th Floor,
Boston MA 02116
Attn: M. Bart Henderson – President

with a copy to:

Bingham McCutchen LLP

One Federal Street
Boston, Massachusetts U.S.A. 02110
Attn: Julio E. Vega, Esq.

Either Party may change its address for communications by a notice in writing to the other Party in accordance with this Section.

**17.5 Force Majeure.** Any prevention, delay or interruption of performance (collectively "**Delay**") by any Party under this Agreement shall not be a breach of this Agreement if and to the extent caused by occurrences beyond the reasonable control of the Party affected by the force majeure, including but not limited to acts of God, embargoes, governmental restrictions, terrorism, general strike, fire, flood, earthquake, explosion, riots, wars (declared or undeclared), civil disorder, rebellion or sabotage. The affected Party shall immediately notify the other Party upon the commencement and end of the Delay. During the Delay, any time for performance hereunder by either Party shall be extended by the actual time of Delay. If the Delay resulting from the force majeure exceeds [ ]*, the other Party, upon written notice to the affected Party, may elect to (a) treat such Delay as a material breach solely for purposes of exercising the right to terminate this Agreement for material breach pursuant to, and in accordance with, Section 14.2, or (b) extend the term of this Agreement for an amount of time equal to the Delay.

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**17.6 Severability.** If any of the provisions of this Agreement are held to be void or unenforceable by a court of competent jurisdiction, then such void or unenforceable provisions shall be replaced by valid and enforceable provisions which will achieve as far as possible the economic business intentions of the Parties. However the remainder of this Agreement will remain in full force and effect, provided that the material interests of the Parties are not affected, i.e. the Parties would presumably have concluded this Agreement without the unenforceable provisions.

**17.7 No Right to Use Names.** Except as otherwise expressly provided herein, this Agreement provides no grant of right to a Party, express or implied, to use in any manner the housemarks or trademarks of the other Party or its Affiliates.

**17.8 Bankruptcy.** All rights and licenses granted under or pursuant to this Agreement by Ipsen are, and will otherwise be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code (or the equivalent provisions, if any, in the bankruptcy laws of the applicable jurisdiction) licenses of rights to "intellectual property" as defined under Section 101 of the U.S. Bankruptcy Code.

**17.9 Legal and Administrative Obligations.** In conducting its obligations under this Agreement, each Party shall observe any and all applicable laws and regulations of the Territory, with respect to the development, manufacture, warehousing, promotion, distribution and sale of [ ]*, and undertakes to make and fulfill any and all formalities in connection with all such activities which may be required under applicable laws and regulations of the Territory. In conducting its obligations under this Agreement, each party further agrees to comply in all means with the current applicable Good Clinical Practices, Good Manufacturing Practices and Good Distribution Practices and apply a high standard of ethics. In particular, each Party undertakes to comply with the principles set forth in the OECD (Organization for Economic Co-operation and Development) Convention on Combating Bribery of Foreign Public Officials in International Business Transactions while performing its activities within the scope of this Agreement.

**17.10 Performance by Affiliates.** Each of Licensee and Ipsen acknowledge that obligations under this Agreement may be performed by Affiliates of Licensee and Ipsen. Each of Licensee and Ipsen guarantee and warrant any performance of this Agreement by its Affiliates. Wherever in this Agreement the Parties delegate responsibility to Affiliates, the Parties agree that such entities may not make decisions inconsistent with this Agreement, amend the terms of this Agreement or act contrary to its terms in any way.

**17.11 Counterparts.** The Parties may execute this Agreement in counterparts, each of which the Parties shall deem an original, but all of which together shall constitute one and the same instrument.

**17.12 Waiver.** A waiver of any default, breach or non-compliance under this Agreement is not effective unless signed by the Party to be bound by the waiver. No waiver will be inferred from or implied by any failure to act or delay in acting by a Party

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in respect of any default, breach, non-observance or by anything done or omitted to be done by the other Party. The waiver by a Party of any default, breach or non-compliance under this Agreement will not operate as a waiver of that Party's rights under this Agreement in respect of any continuing or subsequent default, breach or non-compliance (whether of the same or any other nature).

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**CONFIDENTIAL**

**IN WITNESS WHEREOF,** the Parties have executed this Agreement by their proper officers as of the date and year first above written.

| **IPSEN PHARMA S.A.S.** | | **RHYTHM METABOLIC, INC.** | |
|---|---|---|---|
| By: | /s/ Pierre Boulud | By: | |
| Name: | Pierre Boulud | Name: | |
| Title: | EVP Corporate Strategy and Managing Director | Title: | |

[Signature Page to Ipsen/Metabolic License Agreement]

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**CONFIDENTIAL**

**IN WITNESS WHEREOF,** the Parties have executed this Agreement by their proper officers as of the date and year first above written.

| **IPSEN PHARMA S.A.S.** | | **RHYTHM METABOLIC, INC.** | |
|---|---|---|---|
| By: | | By: | /s/ Keith Gottesdiener |
| Name: | | Name: | Keith Gottesdiener |
| Title: | | Title: | CEO |

[Signature Page to Ipsen/Metabolic License Agreement]

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**APPENDIX A — IPSEN [ ]* Patent Rights as of January 30, 2013**

[ ]*

| First Priority Country | Filing Date | Application Number | Publication Date | Publication Number | Grant Date | Grant Number | Expiration Date |
|---|---|---|---|---|---|---|---|
| [ ]* | | | | | | | |

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**APPENDIX B — IPSEN ONGOING PRE-CLINICAL STUDIES**

[ ]*

| Study | Study no. | Status 22/12/09 | Final |
|---|---|---|---|

[ ]*

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**Appendix C — INITIAL DEVELOPMENT PLAN**

**Rhythm Metabolic, Inc.**

**Clinical Development Plan**

**[ ]***

[ ]*

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**DEVELOPMENT AND MANUFACTURING SERVICES AGREEMENT**

**THIS DEVELOPMENT AND MANUFACTURING SERVICES AGREEMENT** is made as of July 17, 2013 (the "Effective Date") by and between **RHYTHM METABOLIC, INC.,** a Delaware corporation with offices at 855 Boylston Street, 11th Floor, Boston, MA 02116, USA ("Rhythm") and **PEPTISYNTHA Inc.**, a US company incorporated under the laws of the state of Delaware with its registered office at 3333 Richmond Avenue, Houston Texas 77098, USA ("Manufacturer").

**RECITALS:**

WHEREAS, Rhythm desires to engage Manufacturer to perform certain Development and/or Manufacturing Services (as those terms are defined below), on the terms and conditions set forth below, and Manufacturer desires to perform such Services for Rhythm.

**AGREEMENT:**

NOW, THEREFORE, in consideration of the foregoing premises and the covenants of the parties set forth in this Agreement, the parties hereto agree as follows:

1. Definitions. Unless this Agreement expressly provides to the contrary, the following terms, whether used in the singular or plural, have the respective meanings set forth below:

1.1 "Affiliate" means, with respect to either Rhythm or Manufacturer, any corporation, company, partnership, joint venture and/or firm which controls, is controlled by or is under common control with Rhythm or Manufacturer, as the case may be. As used in the definition of Affiliate, "control" means (a) in the case of corporate entities, direct or indirect ownership of at least fifty percent (50%) of the stock or shares having the right to vote for the election of directors (or such lesser percentage that is the maximum allowed to be owned by a foreign corporation in a particular jurisdiction), and (b) in the case of non-corporate entities, the direct or indirect power to manage, direct or cause the direction of the management and policies of the non-corporate entity or the power to elect at least fifty percent (50%) of the members of the governing body of such non-corporate entity.

1.2 "Agreement" means this Development and Manufacturing Services Agreement, together with all Appendices attached hereto, as amended from time to time by the parties in accordance with Section 15.6, and all fully signed Work Orders entered into by the parties.

1.3 "API/Drug Substance" means the active pharmaceutical ingredient or drug substance identified on the applicable Work Order, or any intermediate or component of such active pharmaceutical ingredient or drug substance.

1.4 "Applicable Law" means all applicable ordinances, rules, regulations, laws, guidelines, guidances, requirements and court orders of any kind whatsoever of any Authority, as amended from time to time including, without limitation, cGMP (if applicable).

1.5 "Authority" means any government regulatory authority responsible for granting approvals for the performance of Services under this Agreement or for issuing regulations

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pertaining to the Manufacture and/or use of Product in the intended country of use, including, without limitation, the FDA.

1.6 "Batch" means a specific quantity of Product that is intended to be of uniform character and quality, within specified limits, and is produced during the same cycle of Manufacture as defined by the applicable Batch record.

1.7 "Batch Documentation" has the meaning set forth in Section 6.2.

1.8 "Certificate of Analysis" means a document signed by an authorized representative of Manufacturer, describing Specifications for, and testing methods applied to, Product, and the results of testing.

1.9 "Certificate of Compliance" means a document, signed by an authorized representative of Manufacturer, certifying that a particular Batch was Manufactured in accordance with cGMP (if applicable), all other Applicable Law, and the Specifications.

1.10 "cGMP" means current good manufacturing practices and regulations applicable to the Manufacture of Product that are promulgated by any Authority.

1.11 "Change Order" has the meaning set forth in Section 5.3.

1.12 "Confidential Information" has the meaning set forth in Section 10.

1.13 "Develop" or "Development" means the studies and other activities conducted by Manufacturer under this Agreement to develop and/or validate all or any part of a Manufacturing Process including, without limitation, analytical tests and methods, formulations and dosage forms and stability.

1.14 "Equipment" means any equipment or machinery, including Rhythm Equipment, used by Manufacturer in the Development and/or Manufacturing of Product, or the holding, processing, testing, or release of Product.

1.15 "Facility" means the facilities of Manufacturer identified in the applicable Work Order, or facilities of an Affiliate of Manufacturer acting as a subcontractor as permitted herein.

1.16 "FDA" means the United States Food and Drug Administration, and any successor agency having substantially the same functions.

1.17 "FDCA" means the United States Federal Food, Drug and Cosmetic Act, 21 U.S.C. §321 et seq., as amended from time to time.

1.18 "*force majeure*" has the meaning set forth in Section 15.2.

1.19 "Improvements" means all Technology, discoveries, inventions, developments, modifications, innovations, updates, enhancements, improvements, writings or rights (whether or not protectable under patent, trademark, copyright or similar laws) that are conceived, discovered, invented, developed, created, made or reduced to practice in the performance of Services under this Agreement.



1.20 "IND" means an Investigational New Drug application filed with the FDA in accordance with Applicable Law.

1.21 "Manufacture" and "Manufacturing" means any steps, processes and activities necessary to produce Product including, without limitation, the manufacturing, processing, packaging, labeling, quality control testing, stability testing, release, storage or supply of Product.

1.22 "Manufacturer Indemnitees" has the meaning set forth in Section 12.2.

1.23 "Manufacturer Technology" means (a) the Technology of Manufacturer (a) existing prior to the Effective Date, or (b) developed or obtained by or on behalf of Manufacturer independent of this Agreement and without reliance upon the Confidential Information of Rhythm.

1.24 "Manufacturing Process" means any and all processes, methods, procedures and activities (or any step in any process or activity) used or planned to be used by Manufacturer to Manufacture Product, as evidenced in the Batch Documentation or master Batch Documentation.

1.25 "New Drug Application" means a New Drug Application filed with the FDA in accordance with Applicable Law.

1.26 "Product" means any API/Drug Substance, or drug product comprised of API/Drug Substance in each case as specified in the applicable Work Order, including, if applicable, bulk packaging and/or labeling as provided in such Work Order.

1.27 "Quality Agreement" has the meaning set forth in Section 2.2.

1.28 "Records" has the meaning set forth in Section 5.4(a).

1.29 "Representative" has the meaning set forth in Section 3.1.

1.30 "Reprocess" and "Reprocessing" means introducing a Product back into the process and repeating appropriate manipulation steps that are part of the established Manufacturing Process. Continuation of a process step after an in-process control test show the process to be incomplete is not considered reprocessing.

1.31 "Rework" and "Reworking" means subjecting a Product to one or more processing steps that are different from the established Manufacturing Process.

1.32 "Rhythm Equipment" means the Equipment, if any, identified on the applicable Work Order as being provided by Rhythm or purchased or otherwise acquired by Manufacturer at Rhythm's expense.

1.33 "Rhythm Indemnitees" has the meaning set forth in Section 12.1.

1.34 "Rhythm Materials" means the materials identified in the applicable Work Order as being provided by Rhythm, including labels (if any) for Product.

1.35 "Rhythm Technology" means (a) Rhythm Materials and any intermediates, components, or derivatives of Rhythm Materials, (b) Product and any intermediates, components, or derivatives of Product, (c) Specifications, and (d) the Technology of Rhythm or its Affiliates

existing prior to the Effective Date, or (ii) developed or obtained by or on behalf of Rhythm or its Affiliates independent of this Agreement and without reliance upon the Confidential Information of Manufacturer.

1.36 "Services" means the Development, Manufacturing and/or other services described in a Work Order entered into by the parties.

1.37 "Specifications" means the list of tests, references to any analytical procedures and appropriate acceptance criteria which are numerical limits, ranges or other criteria for tests described in order to establish a set of criteria to which Product at any stage of Manufacture should conform to be considered acceptable for its intended use that are provided by or approved by Rhythm, as such specifications are amended or supplemented from time to time by Rhythm in writing.

1.38 "Technology" means all inventions, technology, compositions of matter, methods, processes, techniques, trade secrets, copyrights, know-how, data, documentation, regulatory submissions, specifications and other intellectual property of any kind (whether or not protectable under patent, trademark, copyright or similar laws).

1.39 "Work Order" means a written work order referencing this Agreement, substantially in the form attached hereto as Appendix A, for the performance of Services by Manufacturer under this Agreement.

2. Engagement of Manufacturer.

2.1 Services and Work Orders. From time to time, Rhythm may wish to engage Manufacturer to perform Services for Rhythm. Such Services will be set forth in a Work Order. Each Work Order will be appended to this Agreement, will include the material terms for the project, and may include the scope of work, specified Services, Specifications, deliverables, timelines, milestones (if any), quantity, budget, payment schedule and such other details and special arrangements as are agreed to by the parties with respect to the activities to be performed under such Work Order. No Work Order will be effective unless and until it has been agreed to and signed by authorized representatives of both parties. Documents relating to the relevant project, including without limitation Specifications, proposals, quotations and any other relevant documentation, will only be effective if attached to the applicable Work Order and incorporated in the Work Order by reference. Each fully signed Work Order will be subject to the terms of this Agreement and will be incorporated herein and form part of this Agreement. Manufacturer will perform the Services specified in each fully signed Work Order, as amended by any applicable Change Order(s), and in accordance with the terms and conditions of such Work Order and this Agreement. Notwithstanding the foregoing, nothing in this Agreement will obligate either party to enter into any Work Order under this Agreement.

2.2 Quality Agreement. If appropriate or if required by Applicable Law, the parties will also agree upon a Quality Agreement containing quality assurance provisions for the Manufacture of Product ("Quality Agreement"), which agreement will also be attached to the applicable Work Order and incorporated by reference in the Work Order.

2.3 Conflict Between Documents. If there is any conflict, discrepancy, or inconsistency between the terms of this Agreement and any Work Order, Quality Agreement, purchase order, or other document or form used by the parties, the terms of this Agreement will control.



3. Project Performance.

3.1 Representatives. Each party will appoint a representative having primary responsibility for day-to-day interactions with the other party for the Services (each, a "Representative"), who will be identified in the applicable Work Order. Each party may change its Representative by providing written notice to the other party in accordance with Section 15.3; provided that Manufacturer will use reasonable efforts to provide Rhythm with at least forty-five (45) days prior written notice of any change in its Representative for the Services. Except for notices or communications required or permitted under this Agreement, which will be subject to Section 15.3, or unless otherwise mutually agreed by the parties in writing, all communications between Manufacturer and Rhythm regarding the conduct of the Services pursuant to such Work Order will be addressed to or routed directly through the parties' respective Representatives.

3.2 Communications. The parties will hold project team meetings via teleconference or in person, on a periodic basis as agreed upon by the Representatives. Manufacturer will make written reports to Rhythm as specified in the applicable Work Order.

3.3 Subcontracting. Manufacturer may not subcontract with any third party to perform any of its obligations under this Agreement without the prior written consent of Rhythm, except that Manufacturer may subcontract to any Affiliate of Manufacturer without the prior written consent of Rhythm if, but only if, Manufacturer provides at least 30 days advance written notice to Rhythm of any such subcontracting to any such Affiliate of Manufacturer. Manufacturer shall promptly provide to Rhythm any information that Rhythm reasonably requests concerning any permitted subcontractor, including, without limitation, any permitted subcontractor that is an Affiliate of Manufacturer. Manufacturer will be solely responsible for the performance of any permitted subcontractor, and for costs, expenses, damages, or losses of any nature arising out of such performance as if such performance had been provided by Manufacturer itself under this Agreement. Manufacturer will cause any such permitted subcontractor to be bound by, and to comply with, the terms of this Agreement, as applicable, including without limitation, all confidentiality, quality assurance, regulatory and other obligations and requirements of Manufacturer set forth in this Agreement.

3.4 Duty to Notify. Manufacturer will promptly notify Rhythm if at any time during the term of this Agreement Manufacturer has reason to believe that it will be unable to perform or complete the Services in a timely manner. Compliance by Manufacturer with this Section 3.4 will not relieve Manufacturer of any other obligation or liability under this Agreement.

4. Materials and Equipment.

4.1 Supply of Materials. Unless the parties otherwise agree in a Work Order, Manufacturer will supply, in accordance with the relevant approved raw material specifications, all materials to be used by Manufacturer in the performance of Services under a Work Order other than the Rhythm Materials specified in such Work Order. Rhythm or its designees will provide Manufacturer with the Rhythm Materials. Manufacturer agrees (a) to account for all Rhythm Materials, (b) not to provide Rhythm Materials to any third party (other than an Affiliate acting as a permitted subcontractor) without the express prior written consent of Rhythm, (c) not to use Rhythm Materials for any purpose other than conducting the Services, including, without limitation, not to analyze, characterize, modify or reverse engineer any Rhythm Materials or take any action to determine the structure or composition of any Rhythm Materials unless required



pursuant to a signed Work Order, and (d) to destroy or return to Rhythm all unused quantities of Rhythm Materials according to Rhythm's written directions.

4.2 Ownership of Materials. Rhythm will at all times retain title to and ownership of the Rhythm. Materials, Product, any intermediates and components of Rhythm Materials or Product, and any work in process at each and every stage of the Manufacturing Process. Manufacturer will provide within the Facility an area or areas where the Rhythm Materials, Product, any intermediates and components of Rhythm Materials or Product, and any work in process are segregated and stored in accordance with the Specifications and cGMP (if applicable), and in such a way as to be able at all times to clearly distinguish such materials from products and materials belonging to Manufacturer, or held by it for a third party's account. Manufacturer will ensure that Rhythm Materials, Product, any intermediates and components of any Rhythm Materials or Product, and any work in process are free and clear of any liens or encumbrances. Manufacturer will at all times take such measures as are required to protect the Rhythm Materials, Product, any intermediates and components of any Rhythm Materials or Product, and any work in process from risk of loss or damage at all stages of the Manufacturing Process. Manufacturer will immediately notify Rhythm if at any time it believes any Product or Rhythm Materials, or any intermediates and components of any Rhythm Materials or Product, have been damaged, lost or stolen.

4.3 Supply of Equipment. Unless otherwise agreed in a Work Order, Manufacturer will supply all Equipment necessary to perform the Services, except that Rhythm will supply the Rhythm Equipment, if any. The Rhythm Equipment will not be used by Manufacturer except in performance of Services under the applicable Work Order. Title to the Rhythm Equipment will remain with Rhythm and Manufacturer will ensure that the Rhythm Equipment is properly labeled as Rhythm property and remains free and clear of any liens or encumbrances. At Rhythm's written request, the Rhythm Equipment will be returned to Rhythm, or to Rhythm's designee. Manufacturer will be responsible, at its own cost, for maintenance of the Rhythm Equipment. To the extent Rhythm provides spare parts for the Rhythm Equipment, such spare parts will remain the property of Rhythm and will be used by Manufacturer only for maintenance of the Rhythm Equipment. Manufacturer will immediately notify Rhythm if at any time it believes any Rhythm Equipment has been damaged, lost or stolen.

5. Development and Manufacture of Product.

5.1 Resources: Applicable Law. Manufacturer will comply with all Applicable Law in performing Services.

5.2 Facility.

(a) Performance of Services. Manufacturer will perform all Services at the Facility, provide all staff necessary to perform the Services in accordance with the terms of the applicable Work Order and this Agreement, and hold at such Facility all Equipment, Rhythm Equipment, Rhythm Materials and other items used in the Services. Manufacturer will not change the location of such Facility or use any additional facility for the performance of Services under this Agreement without at least one hundred fifty (150) days prior written notice to, and prior written consent from, Rhythm, which consent will not be unreasonably withheld or delayed (it being understood and agreed that Rhythm may withhold consent pending satisfactory completion of a quality assurance audit and/or regulatory impact assessment of the new location or additional facility, as the case may be). Manufacturer will maintain, at its own expense, the Facility and all Equipment required for the Manufacture of Product in a state of repair and



operating efficiency consistent with the requirements of cGMP (if applicable) and all Applicable Law.

(b) Validation. Manufacturer will be responsible for performing all validation of the Facility, Equipment and cleaning and maintenance processes employed in the Manufacturing Process in accordance with cGMP (if applicable), Manufacturer's SOPs, the applicable Quality Agreement, Applicable Law, and in accordance with any other validation procedures established by Rhythm and made known in writing to Manufacturer. Manufacturer will also be responsible for ensuring that all such validated processes are carried out in accordance with their terms.

(c) Licenses and Permits. Manufacturer will be responsible for obtaining, at its expense, any Facility or other licenses or permits, and any regulatory and government approvals necessary for the performance of Services by Manufacturer under this Agreement. At Rhythm's request, Manufacturer will provide Rhythm with copies of all such approvals and submissions to Authorities, and Rhythm will have the right to use any and all information contained in such approvals or submissions in connection with regulatory approval and/or commercial development of Product.

(d) Access to Facility. Manufacturer will permit Rhythm or its duly authorized representatives to observe and consult with Manufacturer during the performance of Services under this Agreement, including without limitation the Manufacturing of any Batch of Product. Manufacturer also agrees that Rhythm and its duly authorized agents will have continuous access upon reasonable notice, during operational hours and during active Manufacturing, to inspect the Facility and Manufacturing Process to ascertain compliance by Manufacturer with the terms of this Agreement, including, without limitation, inspection of (i) the Equipment and materials used in the performance of Services, (ii) the holding facilities for such materials and Equipment, and (iii) all Records relating to such Services and the Facility. Rhythm will also have the right, at its expense, to conduct "mock" pre-approval audits upon reasonable notice to Manufacturer, and Manufacturer agrees to cooperate with Rhythm in such "mock audits."

5.3 Changes to Work Orders, Manufacturing Process and Specifications.

(a) Changes to Work Orders. If the scope of work of a Work Order changes, then the applicable Work Order may be amended as provided in this Section 5.3(a). If a required modification to a Work Order is identified by Rhythm or by Manufacturer, the identifying party will notify the other party in writing as soon as reasonably possible. Manufacturer will provide Rhythm with a change order containing a description of the required modifications and their effect on the scope, fees and timelines specified in the Work Order ("Change Order"), and will use reasonable efforts to do so within ten (10) business days of receiving or providing such notice, as the case may be. No Change Order will be effective unless and until it has been signed by authorized representatives of both parties. If Rhythm does not approve such Change Order, and has not terminated the Work Order, but requests the Work Order to be amended to take into account the modification, then the parties will use reasonable efforts to agree on a Change Order that is mutually acceptable. If practicable, Manufacturer will continue to work under the existing Work Order during any such negotiations, provided such efforts would facilitate the completion of the work envisioned in the proposed Change Order, but will not commence work in accordance with the Change Order until it is authorized in writing by Rhythm.



(b) Process/Specifications Changes. Any change or modification to the Manufacturing Process or Specifications for any Product must be approved in advance by Rhythm and will be made in accordance with the change control provisions of the applicable Quality Agreement. With timely notice, Rhythm shall grant such approval for any such change or modification to the Manufacturing Process, unless such change or modification is material in which case the granting of such approval shall be at Rhythm's sole and absolute discretion.

5.4 Record and Sample Retention.

(a) Records. Manufacturer will keep complete and accurate records (including, without limitation, reports, accounts, notes, data, and records of all information and results obtained from performance of Services) of all work done by it under this Agreement, in form and substance as specified in the applicable Work Order, the applicable Quality Agreement, and this Agreement (collectively, the "Records"). All such Records will be the property of Rhythm. Manufacturer will not transfer, deliver or otherwise provide any such Records to any party other than Rhythm, without the prior written approval of Rhythm. Records will be available at reasonable times for inspection, examination and copying by or on behalf of Rhythm All original Records of the Development and Manufacture of Product under this Agreement will be retained and archived by Manufacturer in accordance with cGMP (if applicable) and Applicable Law, but in no case for less than a period of five (5) years following completion of the applicable Work Order. Upon Rhythm's request, Manufacturer will promptly provide Rhythm with copies of such Records. Five (5) years after completion of a Work Order, all of the aforementioned records will be sent to Rhythm or Rhythm's designee; provided, however, that Rhythm may elect to have such records retained in Manufacturer's archives for an additional period of time at a reasonable charge to Rhythm.

(b) Sample Retention. Manufacturer will take and retain, for such period and in such quantities as may be required by cGMP (if applicable) and the applicable Quality Agreement, samples of Product from the Manufacturing Process produced under this Agreement. Further, upon Rhythm's written request, Manufacturer will submit such samples to Rhythm.

5.5 Regulatory Matters.

(a) Regulatory Approvals. Rhythm will be responsible for obtaining, at its expense, all regulatory and governmental approvals and permits necessary for Rhythm's use of any Product Developed and/or Manufactured under this Agreement, including, without limitation, IND, ANDA, and NDA submissions and any analogous submissions filed with the appropriate Authority of a country other than the United States. Manufacturer will be responsible for providing Rhythm with all supporting data and information relating to the Development and/or Manufacture of Product necessary for obtaining such approvals, including, without limitation, all Records, raw data, reports, authorizations, certificates, methodologies, Batch Documentation, raw material specifications, SOPs, standard test methods, Certificates of Analysis, Certificates of Compliance and other documentation in the possession or under the control of Manufacturer relating to the Development and Manufacture of Product (or any intermediate, or component of Product).

(b) Regulatory Inspections. Manufacturer will permit Rhythm or its agents to be present and participate in any visit or inspection by any Authority of the Facility (to the extent it relates in any way to any Product) or the Manufacturing Process. Manufacturer will give as much advance notice as reasonably possible to Rhythm of any such visit or inspection. Manufacturer will provide Rhythm with a copy of any report or other written communication

received from such Authority in connection with such visit or inspection, and any written communication received from any Authority relating to any Product, the Facility (if it relates to or affects the Development and/or Manufacture of Product) or the Manufacturing Process, within two (2) business days after receipt, and will consult with, and require approval from, Rhythm before responding to each such communication. Manufacturer will provide Rhythm with a copy of its final responses within five (5) business days after submission.

5.6 Waste Disposal. The generation, collection, storage, handling, transportation, movement and release of hazardous materials and waste generated in connection with the Services will be the responsibility of Manufacturer at Manufacturer's sole cost and expense. Without limiting other applicable requirements, Manufacturer will prepare, execute and maintain, as the generator of waste, all licenses, registrations, approvals, authorizations, notices, shipping documents and waste manifests required under Applicable Law.

5.7 Safety Procedures. Manufacturer will be solely responsible for implementing and maintaining health and safety procedures for the performance of Services and for the handling of any materials or hazardous waste used in or generated by the Services. Manufacturer, in consultation with Rhythm, will develop safety and handling procedures for API/Drug Substance and Product; provided, however, that Rhythm will have no responsibility for Manufacturer's health and safety program.

6. Testing and Acceptance Process.

6.1 Testing by Manufacturer. The Product Manufactured under this Agreement will be Manufactured in accordance with the Manufacturing Process approved by Rhythm, and with cGMP (unless otherwise expressly stated in the applicable Work Order) and will conform to the Specifications. Each Batch of Product will be sampled and tested by Manufacturer against the Specifications, and the quality assurance department of Manufacturer will review the documentation relating to the Manufacture of the Batch and will assess if the Manufacture has taken place in compliance with cGMP (if applicable) and the Manufacturing Process.

6.2 Provision of Records. If, based upon such tests and documentation review, a Batch of Product conforms to the Specifications and was Manufactured according to cGMP (if applicable) and the Manufacturing Process, then a Certificate of Compliance will be completed and approved by the quality assurance department of Manufacturer. Manufacturer shall maintain full Batch records that will be accessible to Rhythm on the premises of the Manufacturer. Batch excerpts shall be made available to Rhythm or its nominee within twenty (20) working days at Rhythm's request. Those Batch excerpts consist of (i) a flow chart of synthesis performed (batch history), including summary of investigation reports, significant deviation reports, planned changes or OOS results generated during manufacture of the Product, (ii) a Certificate of Analysis (CoA), and (iii) a Certificate of Compliance (CoC) (collectively, "Batch Documentation"). For each Batch of Product, Batch Documentation will be delivered at no cost to Rhythm by a reputable overnight courier or by registered or certified mail, postage prepaid, return receipt required to verify delivery date.

Upon request Manufacturer will deliver to Rhythm a complete and accurate copy of the Batch records for each Batch of Product. Upon request, Manufacturer will also deliver to Rhythm all raw data, reports, authorizations, certificates, methodologies, raw material specifications, SOPs, standard test methods, and other documentation in the possession or under the control of Manufacturer relating to the Manufacture of each Batch of Product. Such information (apart from Batch Documentation) requested by Rhythm from Manufacturer will be delivered at cost. If



Rhythm requires additional copies of such information, these will also be provided by Manufacturer to Rhythm at cost.

6.3 Review of Batch Documentation; Acceptance. Rhythm will review the Batch Documentation for each Batch of Product and may test samples of the Batch of Product against the Specifications. Rhythm will notify Manufacturer in writing of its acceptance or rejection of such Batch within six (6) weeks of receipt of the complete Batch Documentation relating to such Batch. During this review period, the parties agree to respond promptly, but in any event within ten (10) days, to any reasonable inquiry or request for a correction or change by the other party with respect to such Batch Documentation. Rhythm has no obligation to accept a Batch if such Batch does not comply with the Specifications and/or was not Manufactured in compliance with cGMP (if applicable) and the Manufacturing Process.

6.4 Disputes. In case of any disagreement between the parties as to whether Product conforms to the applicable Specifications or cGMP (if applicable), the quality assurance representatives of the parties will attempt in good faith to resolve any such disagreement and Rhythm and Manufacturer will follow their respective SOPs to determine the conformity of the Product to the Specifications and cGMP (if applicable). If the foregoing discussions do not resolve the disagreement in a reasonable time (which will not exceed thirty (30) days), a representative sample of such Product will be submitted to an independent testing laboratory mutually agreed upon by the parties for tests and final determination of whether such Product conforms with such Specifications. The laboratory must meet cGMP (if applicable), be of recognized standing in the industry, and consent to the appointment of such laboratory will not be unreasonably withheld or delayed by either party. Such laboratory will use the test methods contained in the applicable Specifications. The determination of conformance by such laboratory with respect to all or part of such Product will be final and binding on the parties absent manifest error. The fees and expenses of the laboratory incurred in making such determination will be paid by the party against whom the determination is made.

6.5 Product Non-Compliance and Remedies. If a Batch of Product fails to conform to the Specifications or was not Manufactured in compliance with cGMP (if applicable) and the Manufacturing Process, then Manufacturer will, as Rhythms' sole and exclusive remedy and in lieu of other remedies available at law or in equity (except for any right of Rhythm to indemnification pursuant to Section 12.1 hereof in connection with third party claims), at Rhythm's sole option:

(a) refund in full the fees and expenses paid by Rhythm for such Batch, including, but not limited to, the cost of Rhythm Materials used in the Manufacture of such Batch; or

(b) at Manufacturer's cost and expense, including, but not limited to, the cost of Rhythm Materials used in the Manufacture of such Batch, Manufacture a new Batch of Product as soon as reasonably possible; or

(c) Rework or Reprocess the Product, at Manufacturer's cost and expense, so that the Batch can be deemed to have been Manufactured in compliance with cGMP (if applicable) and the Manufacturing Process, and to conform to Specifications.

Moreover, the parties will meet to discuss, evaluate and analyze the reasons for and implications of the failure to comply with cGMP (if applicable) and/or the Manufacturing Process and will



decide whether to proceed with or to amend the applicable Work Order via a Change Order, or to terminate such Work Order.

6.6 Disposition of Non-Conforming Product. The ultimate disposition of non-conforming Product will be the responsibility of Rhythm's quality assurance department.

7. Shipping and Delivery. Manufacturer agrees not to ship Product to Rhythm or its designee until it has received a written approval from Rhythm or Rhythm's designee to release and ship. Manufacturer will ensure that each Batch will be delivered to Rhythm or Rhythm's designee, (a) on the delivery date and to the destination designated by Rhythm in writing, and (b) in accordance with the instructions for shipping and packaging specified by Rhythm in the applicable Work Order or as otherwise agreed to by the parties in writing. Delivery terms will be FCA (Incoterms 2000), or as specified in the applicable Work Order. A bill of lading will be furnished to Rhythm with respect to each shipment.

8. Fees and Payments.

8.1 Price. The price of Product and/or the fees and expenses for the performance of Services will be set forth in the applicable Work Order.

8.2 Invoice. Manufacturer will invoice Rhythm according to the invoice schedule in the applicable Work Order, referencing in each such invoice the Work Order(s) to which such invoice relates. Notwithstanding the foregoing, Manufacturer will not issue a final invoice for a Batch of Product until such time as such Batch has been shipped to Rhythm. Payment of undisputed invoices will be due sixty (60) days after receipt of the invoice and reasonable supporting documentation by Rhythm.

8.3 Payments. Rhythm will make all payments pursuant to this Agreement by check or wire transfer to a bank account designated in writing by Manufacturer. All payments under this Agreement will be made in United States Dollars.

8.4 Financial Records. Manufacturer will keep accurate records of all Services performed and invoice calculations, and, upon the request of Rhythm, will permit Rhythm or its duly authorized agents to examine such records upon prior notice during normal business hours for the purpose of verifying the correctness of all such calculations.

8.5 Taxes. Duty, sales, use or excise taxes imposed by any governmental entity that apply to the provision of Services will be borne by Rhythm (other than taxes based upon the income of Manufacturer).

9. Intellectual Property Rights.

9.1 Rhythm Technology. All rights to and interests in Rhythm Technology will remain solely in Rhythm and no right or interest therein is transferred or granted to Manufacturer under this Agreement. Manufacturer acknowledges and agrees that it does not acquire a license or any other right to Rhythm Technology except for the limited purpose of carrying out its duties and obligations under this Agreement and that such limited, non-exclusive, license will expire upon the completion of such duties and obligations or the termination or expiration of this Agreement, whichever is the first to occur.



9.2 Manufacturer Technology.

9.2.1 All rights to and interests in Manufacturer Technology will remain solely in Manufacturer and, except as otherwise set forth in this Section 9, no right or interest therein is transferred or granted to Rhythm under this Agreement.

9.2.2 Manufacturer hereby grants to Rhythm and its Affiliates a non-exclusive, worldwide, perpetual, irrevocable (subject to Section 14.3 (a), (b) and (c)), royalty-free and transferable (subject to the provisions of Section 9.2.4) license to use and modify Manufacturer Technology to develop, Manufacture, have Manufactured, distribute, offer for sale, sell, and otherwise dispose of Product. Rhythm and its Affiliates shall have the right, subject to Section 9.2.3, to grant sublicenses in respect of such license to any person to whom Rhythm (and/or its Affiliates, licensees, sublicensees, successors or assigns) has licensed or otherwise granted the right to develop, Manufacture, have Manufactured or commercialize Product. For and in consideration of such non-exclusive license granted by Manufacturer to Rhythm and its Affiliates, Rhythm hereby agrees that, during the period commencing on the launch date of a Product and ending on the [ ]* anniversary of the launch date of such Product, Rhythm (and/or its Affiliates, licensees, sublicensees, successors or assigns) shall source from Manufacturer at least [ ]* of that portion of its requirements for such Product that Rhythm (and/or its Affiliates,

licensees, sublicensees, successors or assigns) is sourcing from all third party contract manufacturers that are not Affiliates, subject to, and in accordance with, the terms and conditions set forth in this Agreement; provided, however, that the foregoing provisions of this sentence shall apply only if (i) Manufacturer can Manufacture at least [ ]* of the requirements of Rhythm (and/or its Affiliates, licensees, sublicensees, successors or assigns) for such Product in accordance with the terms of this Agreement and the quality and cost to Rhythm (and/or its Affiliates, licensees, sublicensees, successors or assigns) of such quantities of such Product to be Manufactured by Manufacturer for Rhythm (and/or its Affiliates, licensees, sublicensees, successors or assigns) shall be no less favorable to Rhythm (and/or its Affiliates, licensees, sublicensees, successors or assigns) than if such Product was Manufactured by any other third party contract manufacturer offering comparable services and quality standards, and for the same quantities of Product, (ii) Manufacturer shall not have breached in any material respect any of its obligations under this Agreement unless Manufacturer has remedied such breach within thirty (30) days after receiving written notice from Rhythm of such breach, and (iii) Rhythm (and/or its Affiliates, licensees, sublicensees, successors or assigns) continue(s) to practice Manufacturer Technology to Manufacture or have Manufactured commercial quantities of such Product.

9.2.3 For each sublicense granted by Rhythm pursuant to the provisions of Section 9.2.2, Rhythm (a) shall inform Manufacturer thereof and ensure that such sublicense shall be consistent with the terms of this Agreement, and shall for such purpose enter into the appropriate agreement with the concerned sublicensee, and (b) be responsible for any failure by such sublicensee to abide by any of its undertakings and obligations under such agreement.

9.2.4 The rights granted by Manufacturer under Section 9.2.2 are transferable to any person to whom Rhythm (and/or its Affiliates, licensees, sublicensees, successors or assigns) has licensed or otherwise granted the right to develop, Manufacture, have Manufactured or commercialize Product, provided, however that Rhythm (a) shall, prior to any such transfer, inform Manufacturer thereof in writing, (b) shall ensure that such transfer shall be consistent with the terms of this Agreement, and (c) shall for such purpose enter into the appropriate agreement with the concerned company.



9.3 Improvements.

9.3.1 Manufacturer agrees (a) to promptly disclose to Rhythm all patentable Improvements, and (b) that all Improvements will be the sole and exclusive property of Rhythm, and are hereby assigned to Rhythm (or its designee), and (c) that any such assignment to Rhythm (or its designee) shall be made without additional compensation to Manufacturer. Manufacturer will take such steps as Rhythm may reasonably request (at Rhythm's expense) to vest in Rhythm (or its designee) ownership of the Improvements.

9.3.2 Rhythm hereby grants to Manufacturer and its Affiliates a non-exclusive, worldwide, perpetual, irrevocable (subject to Section 14.3 (a), (b) and (0) and royalty-free license, with the right to sublicense, under the Improvements assigned by Manufacturer to Rhythm pursuant to Section 9.3.1, to manufacture, distribute, offer for sale, sell, and otherwise dispose of any product other than a compound or product targeting the [ ]*.

9.4 Patent Filings. Rhythm will have the exclusive right and option, but not the obligation, to prepare, file, prosecute, maintain and defend, at its sole expense, any patents that claim or cover the Improvements.

9.5 Technology Transfer. If Rhythm elects to Manufacture Product, or to have Product Manufactured by a third party, then Manufacturer will provide to Rhythm or its designee, all Manufacturing information, including, without limitation, documentation, technical assistance, materials and cooperation by appropriate employees of Manufacturer as Rhythm or its designee may reasonably require in order to Manufacture Product. Rhythm will compensate Manufacturer and/or its Affiliates, for such assistance at the hourly-rate(s) set forth in the applicable Work Order, or such other reasonable rate(s) as the parties may agree in writing, and shall reimburse to Manufacturer and/or its Affiliates all travel and lodging expenses incurred for the same provided that they have been approved in advance by Rhythm.

10. Confidentiality.

10.1 Confidential Information. During the Term and continuing thereafter, each party will keep confidential and not disclose to others or use for any purpose other than as necessary to fulfill its obligations or in the reasonable exercise of rights granted to it under this Agreement, all "Confidential Information" of the other party. As used in this Agreement, "Confidential Information" of either party means any scientific, technical, trade or business information which (x) is given by such party or its Affiliates or their respective employees or representatives to the other and which is treated by the disclosing party as confidential or proprietary or a trade secret and is not within the scope of clause (y) or clause (z) below, (y) is developed by the other party for such party under the terms of this Agreement or (z) is owned by such party by virtue of any provision of this Agreement that assigns or transfers ownership thereof to such party from the other party. Confidential Information of Manufacturer includes, but is not limited to, Manufacturer Technology, including any Manufacturer Technology embodied in any Batch Record or Batch Documentation. Confidential Information of Rhythm includes, but is not limited to, Rhythm Technology and Improvements. The restrictions of this Section will not apply to any portion of the Confidential Information which (a) is known to the recipient at the time of disclosure and is not subject to another confidentiality obligation to the discloser or its Affiliates, as reasonably documented by recipient's written records; (b) later becomes available to the public through no fault of the recipient; (c) is received from a third party having the lawful right to disclose the information; or (d) is independently developed by or on behalf of recipient without

use of or reliance upon discloser's Confidential Information. Any information which is specific, shall not be deemed to be within any of the foregoing exceptions, merely because it is embraced by more general information which falls within any one or more of the foregoing exceptions. In addition, information will not be deemed to be available to the public by reason solely that it is accessible to only a few of those people to whom it might be of commercial interest, and any combination of two (2) or more portions of the Confidential Information shall not be deemed to be generally available to the public by reason solely of each separate portion being so available.

10.2 Permitted Disclosure. A party may disclose Confidential Information of the other party to (a) its Affiliates, and to its and their 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 and (b) the extent such disclosure is required to comply with Applicable Law, the rules of any stock exchange or listing entity, or to defend or prosecute litigation; provided, however, that the recipient provides prior written notice of such disclosure to the discloser and takes reasonable and lawful actions to avoid or minimize the degree of such disclosure, including upon the discloser's request, seeking confidential treatment of such Confidential Information. Moreover, Rhythm may disclose Confidential Information of Manufacturer relating to the Development and/or Manufacture of Product to entities with whom Rhythm has (or may have) a marketing and/or development collaboration for the Product or to whom Rhythm has (or may have) granted a license or sublicense to develop, manufacture or commercialize the Product or to *bona fide* actual or prospective underwriters, investors, lenders or other financing sources or to potential acquirors of the business to which this Agreement relates, and who in each case have a specific need to know such Confidential Information and who are bound by a like obligation of confidentiality and restrictions on use.

10.3 Return of Confidential Information. This Agreement does not constitute the conveyance of ownership with respect to or a license to any Confidential Information, except as otherwise provided in this Agreement. Upon the expiration or termination of this Agreement for any reason, each party agrees, except as otherwise provided in this Agreement, to return to the other party all documentation or other tangible evidence or embodiment of Confidential Information belonging to the other party and not to use such Confidential Information, unless otherwise agreed. Notwithstanding the foregoing, one archival copy may be maintained by the recipient and kept confidential and segregated from the recipient's regular files.

10.4 Public Statements. Except to the extent otherwise required in order to comply with any Applicable Law, neither party will make any public statements or releases concerning this Agreement or the transactions contemplated by this Agreement, or use the other party's name in any form of advertising, promotion or publicity, without obtaining the prior written consent of the other party.

11. Representations and Warranties.

11.1 Manufacturer's Representations and Warranties. Manufacturer represents and warrants to Rhythm that:

(a) it has the full power and right to enter into this Agreement and that there are no outstanding agreements, assignments, licenses, encumbrances or rights of any kind held by other parties, private or public, that are inconsistent with the provisions of this Agreement;

(b) the execution and delivery of this Agreement by Manufacturer has been authorized by all requisite corporate action and this Agreement is and will remain a valid and



binding obligation of Manufacturer, enforceable in accordance with its terms, subject to laws of general application relating to bankruptcy, insolvency and the relief of debtors;

(c) the Services will be performed with requisite care, skill and diligence, in accordance with Applicable Law and industry standards, and by individuals who are appropriately trained and qualified;

(d) it has and shall continue to have written agreements with its directors, officers, employees, agents, permitted subcontractors and representatives to effectuate the terms of this Agreement, including without limitation Sections 9 and 10 hereof, and shall enforce such agreements to provide Rhythm with the benefits thereof;

(e) the conduct and the provision of the Services will not violate any patent, trade secret or other proprietary or intellectual property rights of any third party and it will promptly notify Rhythm in writing should it become aware of any claims asserting such violation;

(f) it shall not knowingly use or incorporate any invention, discovery, technology, know-how and/or other intellectual property that is not owned by, or otherwise assignable, licensable or sublicensensable by, Manufacturer in the performance of the Services without the prior written consent of Rhythm;

(g) at the time of delivery to Rhythm, the Product Manufactured under this Agreement (i) will have been Manufactured in accordance with cGMP (if applicable) and all other Applicable Law, the Manufacturing Process, the applicable Quality Agreement, and Specifications, and (ii) will not be adulterated or misbranded under the FDCA or other Applicable Law; and

(h) Manufacturer, its Affiliates, approved subcontractors, and each of their respective officers and directors, as applicable, and any person used by Manufacturer, its Affiliates or approved subcontractors to perform Services under this Agreement (i) have not been debarred and are not subject to a pending debarment, and will not use in any capacity in connection with the Services any person who has been debarred or is subject to a pending debarment pursuant to Section 306 of the FDCA, 21 U.S.C. § 335a, (ii) are not ineligible to participate in any federal and/or state healthcare programs or federal procurement or non-procurement programs (as that term is defined in 42 U.S.C. 1320a-7b(f)), (iii) are not disqualified by any government or regulatory agencies from performing specific services, and are not subject to a pending disqualification proceeding, and (iv) have not been convicted of a criminal offense related to the provision of healthcare items or services and are not subject to any such pending action. Manufacturer will notify Rhythm immediately if Manufacturer, its Affiliates, approved subcontractors, or any of their respective officers or directors, as applicable, or any person used by

Manufacturer, its Affiliates or approved subcontractors to perform Services under this Agreement is subject to any of the foregoing, or if any action, suit, claim, investigation, or proceeding relating to the foregoing is pending, or to the best of Manufacturer's knowledge, is threatened.

11.2 Rhythm Representations and Warranties. Rhythm represents and warrants to Manufacturer that:



(a) it has the full power and right to enter into this Agreement and that there are no outstanding agreements, assignments, licenses, encumbrances or rights held by other parties, private or public, that are inconsistent with the provisions of this Agreement; and

(b) the execution and delivery of this Agreement by Rhythm has been authorized by all requisite corporate action and this Agreement is and will remain a valid and binding obligation of Rhythm, enforceable in accordance with its terms, subject to laws of general application relating to bankruptcy, insolvency and the relief of debtors.

11.3 Disclaimer of Other Representations and Warranties. EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT OR IN ANY WORK ORDER, NEITHER PARTY MAKES ANY REPRESENTATIONS OR EXTENDS ANY WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

12. Indemnification.

12.1 Indemnification by Manufacturer. Manufacturer agrees to indemnify Rhythm, its Affiliates and its and their respective officers, directors, employees, subcontractors, and agents (collectively, the "Rhythm Indemnitees") against any and all losses, damages, liabilities or expenses (including reasonable attorneys fees and other costs of defense) (collectively, "Losses") in connection with any and all actions, suits, claims or demands that may be brought or instituted against any Rhythm Indemnitee by any third party to the extent they arise out of or relate to (a) breach of this Agreement by Manufacturer, or (b) Manufacturer Indemnitees' negligence or willful misconduct in performing obligations under this Agreement.

12.2 Indemnification by Rhythm. Rhythm agrees to indemnify Manufacturer, its Affiliates and its and their respective officers, directors, employees, subcontractors, and agents (collectively, the "Manufacturer Indemnitees") against any and all Losses in connection with any and all actions, suits, claims or demands that may be brought or instituted against any Manufacturer Indemnitee by any third party to the extent they arise out of or relate to (a) the use of the Product (except to the extent that such Losses are within the scope of the indemnification obligation of Manufacturer under Section 12.1), (b) any breach of this Agreement by Rhythm, or any Rhythm Indemnitees' negligence or willful misconduct in performing obligations under this Agreement.

12.3 Indemnification Procedures. Each party agrees to notify the other party within thirty (30) days of receipt of any claims made for which the other party might be liable under Section 12.1 or 12.2, as the case may be. Subject to Section 12.4, the indemnifying party will have the right, but not the obligation, to defend, negotiate, and settle such claims. The indemnified party will be entitled to participate in the defense of such matter and to employ counsel at its expense to assist therein; provided, however, that if the indemnifying party elects to defend the indemnified party, the indemnifying party will have final decision-making authority regarding all aspects of the defense of any claim, subject to Section 12.4. The party seeking indemnification will provide the indemnifying party with such information and assistance as the indemnifying party may reasonably request, at the expense of the indemnifying party. The parties understand that no insurance deductible will be credited against losses for which a party is responsible under this Section 12.



12.4 Settlement. Neither party will be responsible or bound by any settlement of any claim or suit made without its prior written consent; provided, however, that the indemnified party will not unreasonably withhold or delay such consent. If a settlement contains an absolute waiver of liability for the indemnified party, and each party has acted in compliance with the requirements of Section 12.3, then the indemnified party's consent will be deemed given. Notwithstanding the foregoing, (i) Manufacturer will not agree to settle any claim on such terms or conditions as would impair Rhythm's ability or right to manufacture, market, sell or otherwise use Product, or as would impair Manufacturer's ability, right or obligation to perform its obligations under this Agreement, and (ii) Rhythm will not agree to settle any claim on such terms or conditions as would impair Manufacturer's ability, right or obligation to perform its obligations under this Agreement.

12.5 Limitation of Liability. NEITHER PARTY WILL BE LIABLE UNDER ANY LEGAL THEORY (WHETHER TORT, CONTRACT OR OTHERWISE) FOR SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES ARISING OUT OF OR RELATED TO THIS AGREEMENT OR THE EXERCISE OF ITS RIGHTS HEREUNDER, INCLUDING LOST PROFITS ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT, HOWEVER CAUSED, EVEN IF THE PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, EXCEPT AS A RESULT OF A BREACH OF THE CONFIDENTIALITY AND NON-USE OBLIGATIONS IN SECTION 10. NOTHING IN THIS SECTION 12.5 IS INTENDED TO LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF EITHER PARTY.

13. Insurance.

13.1 Manufacturer Insurance. Manufacturer will secure and maintain in full force and effect throughout the term of this Agreement (and for at least three (3) years thereafter for claims made coverage), insurance with coverage and minimum policy limits set forth as follows:

(a) *Worker's Compensation*, including coverage for occupational disease, with benefits determined by statute;

(b) *Comprehensive General Liability and Personal/Advertising Injury*, including coverage for contractual liability assumed by Manufacturer and coverage for Manufacturer's independent contractor(s), with at least [ ]* United States Dollars ($[ ]*) combined single limit for bodily injury and property damage per occurrence, and a general aggregate limit of [ ]* United States Dollars ($[ ]*);

(c) *Products Liability*, exclusive of the coverage provided by the Comprehensive General Liability policy, with at least [ ]* United States Dollars ($[ ]*) per occurrence and an aggregate limit of [ ]* United States Dollars ($[ ]*);

(d) *"All Risk" Property*, valued at replacement cost, covering loss or damage to the Facility and Rhythm's property and materials in the care, custody, and control of Manufacturer; and

(e) *Comprehensive Automobile Liability, Employer's Liability, and Umbrella Liability*, in such amounts and under such terms as are customary for similar companies providing like services.



13.2 Evidence of Insurance. Manufacturer will furnish to Rhythm a certificate from an insurance carrier (having a minimum AM Best rating of A and financial strength of VIII) demonstrating the insurance requirements set forth above. The insurance certificate will confirm each of the following:

(a) excluding Manufacturer's Worker's Compensation policy, Rhythm and its Affiliates are named as an additional insured with respect to matters arising from this Agreement;

(b) such insurance is primary and non-contributing to any liability insurance carried by Rhythm; and

(c) thirty (30) days prior written notice will be given to Rhythm of cancellation or any material change in the policies.

13.3 Insurance Information. Manufacturer will comply, at Rhythm's expense, with reasonable requests for information made by Rhythm's insurance provider representative(s), including permitting such representative(s) to inspect the Facility during operational hours and upon reasonable notice to Manufacturer. In regard to such inspections, the representative(s) will adhere to such guidelines and policies pertaining to safety and non-disclosure as Manufacturer may reasonably require.

14. Term and Termination.

14.1 Term. This Agreement will take effect as of the Effective Date and, unless earlier terminated pursuant to this Section 14, will expire on the later of (a) six (6) years from the Effective Date, or (b) the completion of Services under all Work Orders executed by the parties prior to the sixth anniversary of the Effective Date. The term of this Agreement may be extended by Rhythm continuously for additional two (2) year periods upon written notice to Manufacturer at least thirty (30) days prior to the expiration of the then current term.

14.2 Termination by Rhythm. Rhythm will have the right, in its sole discretion, to terminate this Agreement or any Work Order (a) upon thirty (30) days prior written notice to Manufacturer(in which case Rhythm shall reimburse Manufacturer for the expenses accrued against any pending Work Order), or (b) immediately upon written notice if (i) in Rhythm's reasonable judgment, Manufacturer is or will be unable to perform the Services in accordance with the agreed upon timeframe and/or budget set forth in the applicable Work Order and after discussion the Parties have not been able to find common ground in relation thereto, or (ii) Manufacturer fails to obtain or maintain any material governmental licenses or approvals required in connection with the Services.

14.3 Termination by Either Party. Either party will have the right to terminate this Agreement or any signed Work Orders that are pending by written notice to the other party, upon the occurrence of any of the following:

(a) the other party files a petition in bankruptcy, or enters into an agreement with its creditors, or applies for or consents to the appointment of a receiver or trustee, or makes an assignment for the benefit of creditors, or becomes subject to involuntary proceedings under any bankruptcy or insolvency law (which proceedings remain undismissed for sixty (60) days);



(b) the other party fails to start and diligently pursue the cure of a material breach of this Agreement within thirty (30) days after receiving written notice from the other party of such breach;

(c) the other party challenges the validity of the Rhythm Technology, the Improvements, or the Manufacturer Technology, as the case may be; or

(d) a *force majeure* event that will, or continues to, prevent performance (in whole or substantial part) of this Agreement or any pending Work Order for a period of at least ninety (90) days, In the case of a *force majeure* event relating solely to a pending Work Order, the right to terminate will be limited to such Work Order.

14.4 Effect of Termination. Manufacturer will, upon receipt of a termination notice from Rhythm, promptly cease performance of the applicable Services and will take all reasonable steps to mitigate the out-of-pocket expenses incurred in connection therewith. In particular, Manufacturer will use its best efforts to:

(a) immediately cancel, to the greatest extent possible, any third party obligations;

(b) promptly inform Rhythm of any irrevocable commitments made in connection with any pending Work Order(s) prior to termination;

(c) promptly return to the vendor for a refund all unused, unopened materials in Manufacturer's possession that are related to any pending Work Order; provided, that Rhythm will have the option, but not the obligation, to take possession of any such materials;

(d) promptly inform Rhythm of the cost of any remaining unused, unreturnable materials ordered pursuant to any pending Work Order(s), and either deliver such materials to Rhythm (or its designee) or properly dispose of them, as instructed by Rhythm; and

(e) perform only those services and activities mutually agreed upon by Rhythm and Manufacturer as being necessary or advisable in connection with the close-out of any pending Work Order(s).

14.5 Return of Materials/Confidential Information. Upon the expiration or termination of this Agreement, each party will promptly return all Confidential Information of the other party that it has received pursuant to this Agreement as required by Section 10.3 and otherwise comply with the obligations set forth in Section 10.3. Manufacturer will also promptly return all Rhythm Materials, Rhythm Equipment, retained samples, data, reports and other property, information and know-how in recorded form that was provided by Rhythm, or developed in the performance of the Services, that are owned by or licensed to Rhythm.

14.6 Inventories. Upon expiration or termination of this Agreement or a pending Work Order, Rhythm at its discretion (a) may purchase from Manufacturer any existing inventories of Product ordered under this Agreement that conforms to the Specifications and is Manufactured in accordance with cGMP (if applicable) and the Manufacturing Process, at the price for such Product set forth in the applicable Work Order, and (b) may either (i) purchase any such Product in process held by Manufacturer as of the date of the termination, at a price to be mutually agreed (it being understood that such price will reflect, on a pro rata basis, work performed and non-cancelable out-of-pocket expenses actually incurred by Manufacturer with



respect to the Manufacture of such in-process Product), or (ii) direct Manufacturer to dispose of such material at Rhythm's cost.

14.7 Payment Reconciliation. Within thirty (30) days after the close-out of a Work Order, Manufacturer will provide to Rhythm a written itemized statement of all work performed by it in connection with the terminated Work Order, an itemized breakdown of the costs associated with that work, and a final invoice for that Work Order. If Rhythm has pre-paid to Manufacturer more than the amount in a final invoice then Manufacturer agrees to promptly refund that money to Rhythm, or to credit the excess payment toward another existing or future Work Order, at the election of Rhythm.

14.8 Survival. Expiration or termination of this Agreement for any reason will not relieve either party of any obligation accruing prior to such expiration or termination. Further, the provisions of Sections 1, 2.3, 4, 5.2(c), 5.2(d), 5.4 through 5.7, 6, 9, 11 through 13, 14.4 through 14.8 and 15, and the provisions of any applicable Quality Agreement, will survive any termination or expiration of this Agreement. The provisions of Section 10 shall survive for a period of ten (10) years after the expiration or termination, of this Agreement.

15. Miscellaneous.

15.1 Independent Contractor. All Services will be rendered by Manufacturer as an independent contractor for federal, state and local income tax purposes and for all other purposes. Manufacturer will not in any way represent itself to be a partner or joint venturer of or with Rhythm. This Agreement does not create an employer-employee relationship between Rhythm on the one hand and Manufacturer or any employee, subcontractors, Affiliate of Manufacturer, or any Manufacturer personnel on the other. Manufacturer is acting under this Agreement as an independent contractor with full power and authority to determine the means, manner and method of performance of Manufacturer's duties. Manufacturer shall be responsible for and shall withhold and/or pay any and all applicable federal, state or local taxes, payroll taxes, workers' compensation contributions, unemployment insurance contributions, or other payroll deductions from the compensation of Manufacturer's employees and other Manufacturer personnel. Manufacturer understands and agrees that it is solely responsible for such matters and that it will indemnify Rhythm and hold Rhythm harmless from all claims and demands in connection with such matters.

15.2 *Force Majeure*. Except as otherwise expressly set forth in this Agreement, neither party will have 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 causes beyond the reasonable control of the affected party, including, without limitation, fire, floods, embargoes, shortages, epidemics, quarantines, war, acts of war (whether war be declared or not), insurrections, riots, civil commotion, strikes, acts of God or acts, omissions, or delays in acting, by any governmental authority ("*force majeure*"). The party affected by any event of *force majeure* will promptly notify the other party, explaining the nature, details and expected duration of the *force majeure* event. Such party will also notify the other party from time to time as to when the affected party reasonably expects to resume performance in whole or in part of its

obligations under this Agreement, and to notify the other party of the cessation of any such event. A party affected by an event of *force majeure* will use its reasonable efforts to remedy, remove, or mitigate such event and the effects of it with all reasonable dispatch. If a party anticipates that an event of *force majeure* may occur, such party will notify the other party of the nature, details and expected duration of the *force majeure* event. Upon termination of the event of force majeure, the performance of any suspended obligation or duty will promptly recommence.



Notwithstanding the foregoing, in no case shall an event of force majeure excuse timely payment of amounts due hereunder for Services rendered by Manufacturer.

15.3 Notices. All notices must be in writing and sent to the address for the recipient set forth in this Agreement below or in a subsequent notice as the recipient may specify in writing under this procedure. All notices must be given (a) by personal delivery, with receipt acknowledged, or (b) by first class, prepaid certified or registered mail, return receipt requested, or (c) by prepaid international express delivery service. Notices will be effective upon receipt or at a later date stated in the notice.

If to Manufacturer, to:

**Managing Director**
**Peptisyntha SA**
**Rue de Ransbeek 310**
**1120 Brussels**
**Belgium**

If to Rhythm, to:

**Rhythm Metabolic, Inc.**
**855 Boylston Street, 11th Floor**
**Boston, MA 02116**
**USA**
**Attention: President**

15.4 Assignment. This Agreement may not be assigned or otherwise transferred by either party without the prior written consent of the other party; provided, however, that either party may, without such consent, but with notice to the other party, assign this Agreement, in whole or in part, (a) in connection with the transfer or sale of all or substantially all of its assets or the line of business or Product to which this Agreement relates, (b) to a successor entity or acquirer in the event of a merger, consolidation or change of control, or (c) to any Affiliate. Any purported assignment in violation of the preceding sentence will be void. Any permitted assignee will assume the rights and obligations of its assignor under this Agreement and any permitted assignment shall not release the assigning party from its obligations under this Agreement.

15.5 Entire Agreement. This Agreement, including the attached Appendices and any fully-signed Work Orders, each of which are incorporated herein, constitute the entire agreement between the parties with respect to the specific subject matter of this Agreement and all prior agreements with respect thereto are superseded. For clarity, this Agreement shall not affect or modify, and is separate and distinct from, the existing Development and Manufacturing Services Agreement, effective as of July 2, 2010, as amended, by and between Rhythm Pharmaceuticals, Inc., and PEPTISYNTHA Inc., which shall continue in force and effect in accordance with its terms.

15.6 No Modification. This Agreement and and/or any Work Order or Quality Agreement may be changed only by a writing signed by authorized representatives of both parties.



15.7 Severability; Reformation. If for any reason a court of competent jurisdiction finds any provision of this Agreement or any portion of such a provision to be invalid or unenforceable, such provision will be reformed to the extent required to make the provision valid and enforceable to the maximum extent permitted by law.

15.8 Governing Law. The validity, interpretation, and enforcement of this Agreement, matters arising out of or related to this Agreement or its making, performance or breach, and related matters shall be governed by the laws of the state of New York, excluding its conflict of laws and principles.

All disputes arising out or in connection with the interpretation, performance and/or termination of this Agreement, which cannot be amicably settled between the parties, shall be finally settled under the Rules of Conciliation and Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with such Rules. Arbitration proceedings shall take place in New York, and shall be conducted in the English language. The award rendered therein shall be final and binding upon the parties. The foregoing is without prejudice to each party's right to seek injunctions and other relief in any appropriate court, to the extent such relief is not available in arbitration.

No term of this Agreement shall be enforceable under the Contracts (Rights of Third Parties) Act 1999 by a person who is not a party to this Agreement, but this shall not affect any right or remedy of any third party which exists or is available other than under that Act. The parties expressly reject any application to this Agreement of (a) the United Nations Convention on Contracts for the International Sale of Goods, and (b) the 1974 Convention on the Limitation Period in the International Sale of Goods, as amended by that certain Protocol, done at Vienna on April 11, 1980.

15.9 Waiver. No waiver of any term, provision or condition of this Agreement in any one or more instances will be deemed to be or construed as a further or continuing waiver of any other term, provision or condition of this Agreement. Any such waiver, extension or amendment will be evidenced by an instrument in writing executed by an officer authorized to execute waivers, extensions or amendments.

15.10 Counterparts. This Agreement may be executed in any number of counterparts, each of which will be deemed an original and all of which together will constitute one and the same instrument.

15.11 Headings. This Agreement contains headings only for convenience and the headings do not constitute or form a part of this Agreement, and should not be used in the construction of this Agreement.

15.12 No Benefit to Third Parties. The representations, warranties, covenants and agreements set forth in this Agreement are for the sole benefit of the parties hereto and their successors and permitted assigns, and they will not be construed as conferring any rights on any other persons.

**[Signature page follows]**



IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the date first above written.

| **RHYTHM METABOLIC, INC.** | | **PEPTISYNTHA, INC.** | |
|---|---|---|---|
| By | /s/ Bart Henderson | By | /s/ Vincent Wilmet |
| Print Name | Bart Henderson | Print Name | Vincent Wilmet |
| Title | President | Title | General Manager [illegible] |
| Date | 7/23/13 | Date | July 17, 2013 |



## APPENDIX A
## SAMPLE WORK ORDER

**THIS WORK ORDER** is by and between **RHYTHM METABOLIC, INC.**, ("Rhythm") and PEPTISYNTIIA, Inc ("Manufacturer"), and upon execution will be incorporated into the Development and Manufacturing Services Agreement between Rhythm and Manufacturer dated as of July , 2013 (the "Agreement"). Capitalized terms in this Work Order will have the same meanings as set forth in the Agreement.

Rhythm hereby engages Manufacturer to provide Services, as follows:

**1. API/Drug Substance and Product.**

*Describe the specific API/Drug Substance(s) and Product(s).*

**2. Services.** Manufacturer will render to Rhythm the following Services:

*Describe the specific Services to be conducted by Manufacturer or attach Manufacturer's proposal.*

**3. Facilit(ies).** The Services described above will be rendered at the following facilities of Manufacturer:

*Include Facility address(es).*

**4. Rhythm Materials.** Rhythm will provide to Manufacturer the following materials to be used by Manufacturer to perform the Services:

*Describe specific materials being provided by Rhythm to Manufacturer.*

**5. Rhythm Equipment.**

*Include any equipment that will be provided by Rhythm to Manufacturer to be used by Manufacturer in performance of the Services.*

**6. Manufacturer Representative.** *Name and Title*

**7. Rhythm Representative.** *Name and Title*

**8.** **Compensation.** The total compensation due Manufacturer for Services under this Work Order is **[INSERT WRITTEN AMOUNT (INSERT NUMERICAL AMOUNT]**. Manufacturer will invoice Rhythm for all amounts due under this Work Order. Such amounts will be invoiced in United States Dollars to the attention of **[INSERT NAME]** as follows: **[INSERT INVOICE SCHEDULE]**. All undisputed payments will be made by Rhythm within ninety (90) days of its receipt of an invoice and reasonable supporting documentation. Payments will be made in United States Dollars.



**9.** **[Quality Agreement.** The provisions of the Quality Agreement, attached hereto as Attachment 1, are incorporated herein by reference.]

All other terms and conditions of the Agreement will apply to this Work Order.

**WORK ORDER AGREED TO AND ACCEPTED BY:**

| **RHYTHM METABOLIC, INC.** | | **PEPTISYNTHA, INC.** | |
|---|---|---|---|
| By | | By | /s/ Vincent Wilmet |
| Print Name | | Print Name | Vincent Wilmet |
| Title | | Title | General Manager [illegible] |
| Date | | Date | July 18, 2013 |

**EXHIBIT 10.8**

**RHYTHM PHARMACEUTICALS, INC. REQUESTS THAT THE MARKED PORTIONS OF THIS EXHIBIT BE GRANTED CONFIDENTIAL TREATMENT UNDER RULE 406 OF THE SECURITIES ACT OF 1933, AS AMENDED**

EXECUTION VERSION

# LICENSE AGREEMENT

**BY AND BETWEEN**

**CAMURUS AB**

**AND**

**RHYTHM PHARMACEUTICALS, INC.**

**CONFIDENTIAL**

* CONFIDENTIAL TREATMENT REQUESTED. OMITTED PORTIONS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 PROMULGATED UNDER THE SECURITIES ACT OF 1933, AS AMENDED

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**CONFIDENTIAL**

* CONFIDENTIAL TREATMENT REQUESTED. OMITTED PORTIONS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 PROMULGATED UNDER THE SECURITIES ACT OF 1933, AS AMENDED

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## LICENSE AGREEMENT

This License Agreement is made as off the Effective Date (hereinafter defined) between **Camurus AB**, a limited liability company organized and existing under the laws of Sweden and having its principal place of business at Ideon Science Park, Sölvegatan 41, SE-223 70 Lund, Sweden (**"Camurus"**) and **Rhythm Pharmaceuticals, Inc.**, a corporation organized and existing under the laws of Delaware and having its principal place of business at 855 Boylston Street, 11th Floor, Boston, MA 02116 USA (**"Rhythm"**) (each a **"Party"** and collectively, the **"Parties"**)

**WITNESSETH**

WHEREAS, Camurus is the owner of all right, title and interest in and to certain patents and know-how relating to the FC Technology (as defined below) which delivers therapeutic levels of drug substance over extended periods by offering a lipid based injectable liquid solution that, within minutes after

injection, forms a controlled release liquid crystal gel matrix in situ on contact with body fluids at site of injection;

WHEREAS, Rhythm has capabilities in the development, manufacture, promotion, marketing, sales and life cycle management of pharmaceutical products and is the owner of all right, title and interest in and to a drug compound known as RM-493;

WHEREAS, Rhythm wishes to obtain an exclusive world-wide license to the FC technology to formulate RM-493 and to develop, manufacture, promote, market, distribute and sell the Product (as defined below) in the Territory (as defined below); and

WHEREAS, Camurus is willing to grant such world-wide exclusive rights to Rhythm in respect of the Product upon the terms and conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the covenants and obligations expressed herein, and intending to be legally bound, the Parties agree as follows:

**1 DEFINITIONS**

1.1 **"Adverse Events"** has the meaning ascribed to it in Section 3.8.

1.2 **"Affiliate"** means, with respect to a Party, any entity or person that controls, is controlled by, or is under common control with that Party. For the purpose of this definition, "control" or "controlled" means, direct or indirect, ownership of fifty percent (50%) or more of the shares of stock entitled to vote for the election of directors in the case of a corporation or fifty percent (50%) or more of the equity interest in the case of any other type of legal entity; status as a general partner in any partnership; or any other arrangement whereby the entity or person controls or has the right to control the board of directors or equivalent governing body of a corporation or other entity or the ability to cause the direction of the management or policies of a corporation or other entity. The Parties acknowledge that in the case of entities organized under the laws of certain countries where the maximum percentage ownership permitted by law for a foreign investor is less than fifty



percent (50%), such lower percentage shall be substituted in the preceding sentence, provided that such foreign investor has the power to direct the management and policies of such entity.

1.3 "**Business Day**" means Monday through Friday, other than holidays observed by Camurus or Rhythm.

1.4 **"Camurus IP"** means (a) the Camurus Platform IP and (b) Camurus' interest in any Joint IP.

1.5 **"Camurus Platform IP"** means (a) all Patent Rights listed in Exhibit 1.5 and (b) all other Intellectual Property Controlled by Camurus or any of its Affiliates during the Term hereof that covers the FC Technology.

1.6 **"Camurus Platform Patents"** has the meaning ascribed to it in Section 7.3.

1.7 **"Camurus Trademark"** means Trademarks Controlled by Camurus, including FluidCrystal® and other Trademarks described in Exhibit 1.7, that relate to the FC Technology.

1.8 **"GCP"** means Good Clinical Practices, as set forth in the ICH Harmonized Guidance on Good Clinical Practice (CPMP/ICH/135/95).

1.9 **"GMP"** means Good Manufacturing Practices, as set forth in the Rules Governing Medicinal Product in the European Union volume 4 and the equivalent requirements and/or applicable guidance in any other jurisdiction in the Territory.

1.10 **"Clinical Trials"** means human clinical trials conducted on healthy volunteers or patients to provide data supporting Regulatory Approval of such drug or label expansion of such drug,

1.11 **CMO"** means one or more Third Party contract manufacturing organization(s) that may be used to source ingredients, components, packaging materials and the like and to manufacture, package, label and quality release Rhythm's requirements for Product for use and/or sale in the Territory, all pursuant to the Rhythm Supply Agreement.

1.12 **"Collaboration Inventions"** means all Intellectual Property conceived and reduced to practice by a Party or any of its Affiliates or by a Third Party on behalf of such Party in the course of performing activities under this Agreement or any of Rhythm's licensees or Sub-licensees.

1.13 **"Collaboration Product Patents"** has the meaning ascribed to it in Section 7.3(b) hereof.

1.14 **"Commercially Reasonable Efforts"** means the level of effort and resources required to develop the Product in a sustained manner consistent with the efforts an international specialty pharmaceutical company of similar size and resources would typically devote to a product owned by such entity which is of similar market potential, at a similar stage in the development or life of such product, taking into account issues of safety, efficacy, product profile, the competitiveness of the

marketplace, the proprietary position of the product, the regulatory structure involved, profitability of the product and other relevant commercial factors.

1.15 **"Competing Product"** means any pharmaceutical product comprising [ ]*.

1.16 **"Confidential Information"** means the following, subject to the exceptions set forth in Section 8.1:

(i) the terms and conditions of this Agreement, for which each Party will be considered a Disclosing Party and a Recipient;

(ii) Know-How within Camurus IP for which Camurus will be considered the Disclosing Party and Rhythm shall be the Recipient;

(iii) Know-How within Rhythm IP for which Rhythm will be considered the Disclosing Party and Camurus shall be the Recipient; and

(iv) any other non-public information, whether or not patentable, disclosed or provided by one Party to the other Party in connection with this Agreement, including, without limitation, information regarding such Party's strategy, business plans, objectives, research, technology, products, IP strategy, business affairs or finances including information of the type that is customarily considered to be confidential information by parties engaged in activities that are substantially similar to the activities being engaged in by the Parties under this Agreement, for which the Party making such disclosure will be considered the Disclosing Party and the receiver will be the Recipient.

1.17 **"Control" or "Controlled"** means possession by a Party of the right to grant to the other Party a license, sublicense or other right to use, of the scope provided for in this Agreement, to Intellectual Property and rights to access or cross-reference regulatory filings without violating the terms of any agreement or other arrangement with any Third Party.

1.18 **"Development Data"** means all chemistry, manufacturing and control, preclinical and clinical data including, without limitation, pharmacological, pharmacokinetic, pharmaceutical development and toxicological data, on the Product (including placebo), including any of the foregoing arising from post registration studies, that is generated at any time during the Term of this Agreement by or for either Party and their Affiliates or any of Rhythm's licensees or sub-licensees.

1.19 **"Development Plan"** means Rhythm's plan for pre-clinical and clinical development of the Product together with associated budget through the Ph1B PK/POC Study. The Development Plan as in effect as of the Effective Date is attached hereto as Exhibit 1.19. The Development Plan is subject to update in accordance with Section 3.1 hereof.

1.20 **"Disclosing Party"** means the Party which discloses Confidential Information to the other Party.

1.21 **"Drug"** means Setmelanotide (also known as RM-493) with the chemical structure described in Exhibit 1.19, and its salts.



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1.22 **"Effective Date"** means the date of the signature of the last Party to execute this Agreement.

1.23 **"EMA"** means the European Medicines Agency and/or the Committee for Human Medicinal Product or any successor agency thereof or, to the extent the mutual recognition or decentralized procedure is used for a Product in the EU, any national governmental authority having the authority to regulate the sale of medicinal of pharmaceutical products in any country in the EU.

1.24 **"FC Technology"** means (i) Camurus' proprietary formulation technology that is referred to as FluidCrystal® injection depot technology, comprising a lipid based injectable liquid solution that, within minutes after injection, forms a controlled release liquid crystal gel matrix in situ on contact with body fluids at the site of injection, including modifications and improvements to such proprietary formulation technology, and (ii) any other controlled release lipid formulation for injection that is conceived and reduced to practice by, or on behalf of, Camurus and that incorporates any active pharmaceutical ingredient without relating specifically to the Drug, Product or Competing Product excluding for the avoidance of doubt controlled release lipid formulations for injection that are developed by a Third Party and acquired by Camurus through licensing, acquisition, merger or otherwise..

1.25 **"First Commercial Sale"** means the date on which a Product is first sold following Regulatory Approval in the Territory by Rhythm or any of its Affiliates or Sublicensees to a Third Party (other than sales by Rhythm to its Affiliates or Sublicensees) in a commercial arm's length transaction.

1.26 "**First Product Patent Application**" means a patent application filed by Rhythm with the United States Patent and Trademark Office pursuant to Section 7.3(d) hereof that specifically claims the Product.

1.27 **"FTE"** means a full time equivalent person year equal to at least 1,650 hours per year of work carried out by an employee.

1.28 **"FTE Costs"** means the cost of FTEs at the FTE Rate.

1.29 **"FTE Rate"** means the price of a single FTE per Calendar Year. The FTE Rate shall be US$[ ]* per hour for all staff. The FTE Rate reflects the fully burdened internal costs of an FTE including all employee-related compensation, including but not limited to, salaries, wages, bonuses, benefits, profit sharing, share option grants, and any other employment costs, including travel and associated subsistence costs (but excluding travel and subsistence costs incurred in any travel) and professional dues and allocable overhead. On the 1 January each Calendar Year, commencing with 1 January 2016, the FTE Rate will be increased by the percentage (%) increase in inflation as measured by the Swedish Consumer Price Index

published by the Statistiska Centralbyrån of Sweden on each 1 January of each Calendar Year. Camurus shall provide Rhythm with the revised FTE Rate by 1 February of each Calendar Year.

1.30 **"GAAP"** means U.S. Generally Accepted Accounting Principles, consistently applied.





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1.31 **"Generic Product"** means a product approved under an Abbreviated New Drug Application, or ANDA, or any non-United States equivalent filing, with the Product as the reference product, that is "therapeutically equivalent" as evidenced by the assignment of any 'A' level therapeutic equivalence rating by the FDA, or any non-United States equivalent rating, such that the product is therapeutically equivalent to the Product, or otherwise is generally substitutable by the pharmacist for the Product when filling a prescription written for the Product without having to seek authorization to do so from the physician writing such prescription.

1.32 **"IND"** means an Investigational New Drug application (together with all subsequent submissions, supplements and amendments thereto, and any materials, documents or information referred to or relied upon thereby) filed with the FDA in conformance with applicable laws and regulations, and the equivalent thereof (or other right to commence clinical testing in humans), as applicable, in jurisdictions outside the United States.

1.33 **"Intellectual Property" or "IP"** means any Patent Rights, Trademarks, Know-How, Confidential Information, and any other intellectual property rights.

1.34 **"Joint Invention"** shall have the meaning defined in Section 7.2(c).

1.35 **"Joint IP"** means any Joint Invention and any Patent Rights claiming any Joint Invention.

1.36 **"Joint Patents"** has the meaning ascribed to it in Section 7.3 (c).

1.37 **"JDC"** means the Joint Development Committee referred to in Section 3.3.

1.38 **"Know-How"** means technical and other information which is not in the public domain, including information comprising or relating to concepts, trade secrets, data, designs, discoveries, formulae, ideas, inventions, materials, methods, models, research plans, procedures, designs for experiments and tests and results of experimentation and testing (including results of research or development), processes (including manufacturing processes, specifications and techniques), laboratory records, chemical, pharmacological, toxicological, clinical, analytical and quality control data, clinical and non-clinical trial data, case report forms, data analyses, reports, manufacturing data or summaries and information contained in submissions to and information from ethical committees and regulatory authorities. Know-How includes documents containing Know-How, including any rights including trade secrets, copyright, database or design rights protecting such Know-How. The fact that an item is known to the public shall not be taken to preclude the possibility that a compilation including the item, and/or a development relating to the item, is not known to the public.

1.39 **"LIBOR"** has the meaning ascribed to it in Section 5.8.

1.40 **"Licensed Field"** means any and all uses including, but not limited to, the treatment, prevention or diagnosis of any disease, disorder or condition.

1.41 **"Manufacturing Costs"** means all [ ]*.





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1.42 **"NDA"** means a new drug, biologic or other application, health registration, marketing authorization application, common technical document, regulatory submission, notice of compliance or equivalent application to the FDA or other applicable Regulatory Authority (excluding local and general business licenses and permits) required to be approved before commercial sale or use of the Product as a pharmaceutical or medicinal product in any formulation or dosage form (excluding any pricing and reimbursement approvals), together with all subsequent submissions, supplements and amendments thereto.

1.43 **"NDA Approval"** means approval of an NDA by the FDA or other applicable Regulatory Authority.

1.44 **"Net Sales"** means, with respect to any Product, the gross amount invoiced by Rhythm, its Affiliates or Sublicensees to unrelated Third Party distributors or agents (in each case, who are not sublicensees), or end users in the Territory for the sale or transfer for value of the applicable Product, less deductions for: (i) trade, quantity and cash discounts and rebates actually given to and taken by customers; (ii) refunds, chargebacks and any other allowances actually paid to or taken by customers, including those granted to managed care entities; (iii) amounts separately and actually credited to customers for Product returns, credits or allowances; (iv) rebates actually paid or credited to any governmental agency (or branch thereof) or to any Third Party payor, administrator or contractee (such as those in respect of any state or federal Medicare, Medicaid or similar programs); (v) discounts mandated by, or granted to meet the requirements of, applicable state, provincial or federal law, paid or credited to a wholesaler, purchaser, Third Party or other contractee including required chargebacks and retroactive price reductions; (vi) special outbound packing, freight, shipping insurance and other transportation expenses that are separately billed to the customer or prepaid; (vii) sales, value-added,

excise and turnover taxes, tariffs and duties, and other taxes directly related to the sale of the Product (but excluding net income taxes); and (viii) the actual amount of any write-offs for bad debt relating to such sales, provided when paid the amount shall be added to the Net Sales.

The amounts of any deductions taken pursuant to clauses (i)-(viii) shall be determined from books and records maintained in accordance with GAAP. This definition of Net Sales shall be updated as needed from time to time as appropriate to reflect changes required by (i) the adoption by Rhythm, as part of its ordinary business practices, consistently applied, of accounting standards other than GAAP or as required by law, or (ii) GAAP so long as Rhythm is utilizing GAAP as its accounting standard. Net Sales shall not include revenue received by Rhythm or any of its Affiliates from transactions with an Affiliate, where the Product in question will be resold to an independent third-party distributor or agent (in each case, who is not a Sublicensee) or end user by the Affiliate where such revenue received by the Affiliate from such resale is included in Net Sales. Revenue received by Rhythm (or any of its Affiliates) from transactions with an Affiliate, where the Product in question is used by the Affiliate solely for such Affiliate's internal purposes shall also be included in Net Sales at a price equal to the fair market value of such transfer(s).





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If the Product is sold in a bundled manner with other products or services of Rhythm then all such deductions shall be fairly and equitably allocated to the Product and other products or services of Rhythm, its Affiliates and Sublicensees, such that the Product does not bear a disproportionate portion of such deductions. The transfer of Product by Rhythm to an Affiliate or Sublicensee shall not be deemed a sale. Net Sales shall be calculated in accordance with generally accepted accounting principles in the United States (US GAAP), consistently applied.

1.45 **"Patent Right"** 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 any of these, including utility applications, divisionals, continuations, continuations-in-part, provisionals, converted provisionals, and continued prosecution applications, and reissue applications; (c) any and all patents that have issued or in the future issue from the foregoing patent applications described in clauses (a) and (b), including author certificates, inventor certificates, utility models, petty 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 supplementary protection certificates and the like) of the foregoing patents or patent applications described in clauses (a), (b) and (c); and (e) any similar rights, including so-called pipeline protection (where the subject matter previously disclosed was not previously patentable in a particular jurisdiction but subsequently becomes patentable subject matter in such jurisdiction), or any importation, revalidation, confirmation or introduction patent or registration patent or patent of additions to any such foregoing patent applications and patents.

1.46 **"Payment Report"** has the meaning ascribed to it in Section 5.7.

1.47 **"Ph1B PK/POC Study"** has the meaning ascribed to it in Section 3.6.

1.48 **"Product(s)"** means the Drug as sole active pharmaceutical ingredient formulated with the FC Technology for injection. For clarity, Products comprised of the same active pharmaceutical ingredient and delivered by similar drug administration methods (e.g., injection, such as by pen, syringe and needle, or needle-free) for same or different duration, or different doses of the same or different formulations of the FC Technology, shall be considered the same Product.

1.49 **"Prosecute" or "Prosecuting"** means with regard to specified Patent Rights, preparing, filing, prosecuting, validating, maintaining and defending such Patent Rights, including with respect to any re-examination, reissue, revocation, interference or opposition proceedings including any appeal therefrom. For the avoidance of doubt, "**Prosecuting"** excludes any infringement suits or other legal proceedings to enforce the specified Patent Rights, regardless of whether or not such proceedings involve the defense of the Patent Rights in suit.

1.50 **"Recipient"** means the Party, which receives Confidential Information from the other Party.





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1.51 **"Regulatory Approvals"** means any NDA Approvals and other approvals, licenses, registrations, or authorizations granted or issued by any Regulatory Authority necessary for the manufacture, packaging, labeling, use, storage, transport, export, import, clinical testing, promotion or sale of the Product in a country, including pricing and reimbursement approvals to the extent the applicable Regulatory Authority in such country require a pricing or reimbursement approval prior to commercialization of a Product in such country.

1.52 **"Regulatory Authority"** means any national, supranational, regional, state or local regulatory agency, department, bureau, commission, council or other governmental entity, including the FDA, in any country involved in the granting or receipt as the case may be of INDs, NDAs or Regulatory Approvals.

1.53 **"Rhythm Collaboration IP"** means all Collaboration Inventions owned by Rhythm pursuant to Section 7.2, 7.3 (d) or Section 7.4, including Rhythm's interest in any Joint IP.

1.54 **"Rhythm IP"** means the Rhythm Collaboration IP and the Rhythm Product IP.

1.55 **"Rhythm Product IP"** means (a) all Patent Rights; (b) all Know-How and all other Intellectual Property; in each of (a) and (b) that (1) are Controlled by Rhythm or any of its Affiliates as of the Effective Date or become Controlled by Rhythm or its Affiliates during the term hereof and (2) are necessary or useful to make or have made, use, offer to sell, sell, have sold, import, or otherwise exploit the Product. Notwithstanding the foregoing, Rhythm Product IP shall not include any Rhythm Collaboration IP.

1.56 **"Rhythm Product Patents"** means all Patent Rights within Rhythm Product IP.

1.57 **"Rhythm Supply Agreement"** means supply agreement between Rhythm and CMO governing the supply of the Product to Rhythm by CMO for the Territory.

1.58 **"Rhythm Trademarks"** means any Trademark owned or registered by Rhythm or that may be granted to Rhythm in the Territory to be used on the Product in the Territory and excluding any Camurus Trademarks.

1.59 **"Royalty Term"** has the meaning ascribed to it in Section 5.3.

1.60 **"Sublicensee"** shall have the meaning defined in Section 2.3.

1.61 **"Term"** shall have the meaning defined in Section 11.1.

1.62 **"Territory"** means the entire world.

1.63 **"Third Party"** means any entity other than Camurus or Rhythm or their respective Affiliates.

1.64 **"Trademarks"** means registered trademarks and applications therefor, unregistered trade or service marks and company names in each case with any and all associated



goodwill and all rights or forms of protection of a similar or analogous nature including rights which protect goodwill whether arising or granted under the laws of any jurisdiction and, for purposes of this definition, trade dress.

1.65 **"Valid Claim"** means a claim of a (i) granted patent which has not been revoked or held unenforceable or invalid by a decision of a court or other governmental agency of competent jurisdiction, which is not appealable or has not been appealed within the time allowed for appeal, and which has not been abandoned, disclaimed or surrendered, or (ii) an unissued published patent application that has not been formally terminated, abandoned, denied or admitted to be invalid or unenforceable through reissue, re-examination or disclaimer and which claim has been pending no longer than the earlier of (a) the date that is ten (10) years after the earliest priority date of the earliest application in which the claim could have been presented or (b) the date that is ten (10) years after the Effective Date, wherein after such earlier date such claim is expired and not a Valid Claim until the date that such a claim is granted or accepted for grant; provided, however, that if the holding of such court or agency with respect to a patent application is later reversed by a court or agency with overriding authority, the claim shall be reinstated as a Valid Claim with respect to Net Sales made after the date of such reversal.

1.66 Interpretation.

· Whenever any provision of this Agreement uses the term "including" (or "includes"), such term shall be deemed to mean "including without limitation" and "including but not limited to" (or "includes without limitations" and "includes but is not limited to") regardless of whether the words "without limitation" or "but not limited to" actually follow the term "including" (or "includes");

· "Herein", "hereby", "hereunder", "hereof" and other equivalent words shall refer to this Agreement in its entirety and not solely to the particular portion of this Agreement in which any such word I used;

· All definitions set forth herein shall be deemed applicable whether the words defined are used herein in the singular or the plural;

· Wherever used herein, any pronoun or pronouns shall be deemed to include both the singular and plural and to cover all genders;

· The recitals set forth at the start of this Agreement, along with the Exhibits to this Agreement, and the terms and conditions incorporated in such recital, Exhibits shall be deemed integral parts of this Agreement and all references in this Agreement to this Agreement shall encompass such recitals, Exhibits and the terms and conditions incorporated in such recitals, Exhibits, *provided*, that in the event of any conflict between the terms and conditions of this Agreement and any terms and conditions set forth in the Exhibits the terms of this Agreement shall control;

· In the event of any conflict between the terms and conditions of this Agreement and any terms and conditions that may be set forth on any order, invoice, verbal agreement or otherwise, the terms and conditions of this Agreement shall govern;



· The Agreement shall be construed as if both Parties drafted it jointly, and shall not be construed against either Party as principal drafter;

· Unless otherwise provided, all references to Sections and Exhibits in this Agreement are to Sections and Exhibits of and to this Agreement;

· Unless otherwise provided, all references to days, months, quarters or years are references to calendar days, calendar months, calendar quarters or calendar years;

· Any reference to any federal, national, state, local or foreign statute or law shall be deemed to also refer to all rules and regulations promulgated thereunder, unless to context requires otherwise; and

· Wherever used, the word "shall" and the word "will" are each understood to be imperative or mandatory in nature and are interchangeable with one another.

**2 LICENSE GRANT TO RHYTHM**

2.1 License Grant. Camurus hereby grants to Rhythm, and Rhythm hereby accepts, the exclusive royalty bearing license under the Camurus IP to develop, make or have made, use, sell, offer for sale, market and promote the Product in the Licensed Field in the Territory. The exclusive rights of Rhythm granted herein are subject to the rights required for Camurus to perform its obligations and exercise its rights under this Agreement.

2.2 Subcontracting. Subject to the terms of Section 2.3, Rhythm and its Affiliates shall have the right, without obtaining the written consent of Camurus, (i) to subcontract its development and manufacturing responsibilities under this Agreement (and grant any necessary sublicenses in connection therewith), and (ii) to engage contract sales organizations to supplement or complement Rhythm's own sales force. Rhythm shall at all times be liable for all such activities as if such activities had been undertaken by Rhythm hereunder.

2.3 Sublicenses. Subject to Section 2.2 Rhythm may not grant sublicenses under the licenses granted under Section 2.1, except as follows.

(a) Rhythm may grant sublicenses to Camurus IP as required to make and have made the Product;

(b) Rhythm may grant sublicenses to the Camurus IP to any of its Affiliates or Third Parties to develop, make, have made, use, sell, offer for sale, market and promote the Product in the Licensed Field in the Territory,

*provided*, that in each such case, (i) Rhythm shall be liable to Camurus as if Rhythm is exercising such sublicensed rights itself under this Agreement, (ii) the Sublicensee shall be permitted to grant further sublicenses, (iii) Rhythm shall provide upon written request by Camurus reasonable assurance that its Sublicensees are required to comply with confidentiality, indemnity, reporting, audit rights, access to Development Data, and information obligations owed by such Sublicensees to Rhythm that correspond and are no less stringent than the confidentiality, indemnity,





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reporting, audit rights, access to Development Data, and information obligations owed by Rhythm to Camurus as set forth in this Agreement. Rhythm shall promptly provide notice to Camurus of any sublicense granted pursuant to this Section 2.3. Any person or entity that receives a sublicense or is otherwise granted the right to promote and sell the Product as permitted hereunder is a "**Sublicensee**".

2.4 Grant Back to Camurus. Subject to and upon the terms and conditions set forth in this Agreement, Rhythm hereby grants to Camurus, and Camurus hereby accepts, a world-wide, paid up, non-exclusive, perpetual license, with the right to sublicense, under Rhythm Collaboration IP (but excluding Rhythm's Development Data and regulatory filings, including INDs, NDAs and Regulatory Approvals, which are addressed in Section 3.7), to develop, make or have made, use, sell, offer for sale, market and promote products that are not the Product or a Competing Product, in the Territory. Notwithstanding anything express or implied in the foregoing provisions of this Section 2.4 to the contrary, such license by Rhythm to and/or under Rhythm Collaboration IP shall only include those portions of any Rhythm Collaboration IP that are directly related to the FC Technology and that do not include information concerning the Drug, the Product or any Competing Product or any method of making or using the same. In the event that Camurus sublicenses any of its rights under this Section 2.4, (i) Camurus shall be liable to Rhythm as if Camurus were exercising such sublicensed rights itself under this Agreement and (ii) Camurus shall provide upon written request by Rhythm reasonable assurance that any sublicensee of Camurus' rights under this Section 2.4 is required to comply with obligations with respect to confidentiality and indemnity owed by such sublicensee to Camurus that correspond and are no less stringent than the obligations owed by Camurus to Rhythm pursuant to this Agreement with respect to confidentiality and indemnity.

**3 DEVELOPMENT OF PRODUCT**

3.1 Rhythm Development Responsibility and Diligence. Rhythm shall have the responsibility for, and have final decision-making authority with respect to, development of the Product at its own cost and Rhythm shall in doing so at all times exercise Commercially Reasonable Efforts to develop the Product through completion of the Ph1B PK/POC Study. If Rhythm elects to continue development of the Product following successful completion of the Ph1B PK/POC Study in accordance with Section 3.6, then Rhythm shall be deemed to have satisfied Rhythm's obligation to use Commercially Reasonable Efforts to develop the Product. Rhythm shall keep the JDC regularly apprised of the progress of the execution of the Development Plan(s). Both parties recognize that, in general, the Development Plans represent projections only and may be subject to change during the development process. Both Parties also recognize that the development of the Product is being undertaken as a bridge of Rhythm's efforts to develop the Drug and secure its approval by Regulatory Authorities; accordingly, in the event and to the extent that the primary Drug development program suffers delays or set-backs, those events will have a corresponding effect on efforts under this Agreement with respect to the Product. Rhythm may decide from time to time to update to the Development Plan(s) as necessary to reflect changes in the progress of development

for the Product. Any proposed change to the Development Plan shall set forth a summary anticipated development activities and timelines for the Product, and propose any responsibility of Rhythm or Camurus (if any) for carrying out any such activities. Rhythm shall also provide to Camurus draft forms of Product protocols for the purpose of obtaining comments. Rhythm shall consider in good faith all comments provided by Camurus within the thirty (30) day period following Camurus receipt of such protocols. Any Clinical Trials shall be conducted by Rhythm in accordance with GCP. If Rhythm elects to continue development of the Product following successful completion of the Ph1B PK/POC Study in accordance with Section 3.6, then Rhythm shall thereafter provide Camurus within sixty (60) days after the end of every second calendar quarter, a reasonably detailed report on progress made toward the development of the Product during such preceding 6-month period, including the status of applications for regulatory approvals until such time as Rhythm becomes obligated to provide Payment Reports pursuant to Section 5.7 in the U.S. or one or more countries within the EU. Rhythm shall be deemed to have satisfied such obligation to provide such reasonably detailed in any calendar year if Rhythm complies with its obligations under Section 3.4(d) hereof with respect to any meeting of the JDC that takes place on any date during such calendar year that is on or prior to the 60th day after the end of the second calendar quarter of such calendar year.

3.2 Camurus Services. Rhythm may utilize Camurus to perform certain agreed development activities as shall be specified in a separate written agreed addendum to the Development Plan. Rhythm shall reimburse Camurus for its costs and expenses incurred in providing such services pursuant to a budget for such costs and expenses, including FTE Costs, which shall be set forth in the addendum to the Development Plan. Such costs and expenses incurred by Camurus may be invoiced to Rhythm on a monthly basis. Rhythm shall effect payment of all invoices to Camurus' designated bank account within thirty (30) days after the date of Camurus' invoice. Camurus shall together with such invoices provide reasonable available supporting documentation of such costs and expenses (including relevant Third Party invoice and specification of hours worked by Camurus and a summary of the work performed). Rhythm agrees not to withhold payment in respect of any Third Party costs that are within an agreed budget, although Rhythm may dispute the same. For clarity, Camurus shall not be obliged to carry out any activities unless Rhythm has agreed to reimburse Camurus the associated costs and expenses.

3.3 Joint Development Committee. Within ten (10) days of the Effective Date, the Parties shall appoint a Joint Development Committee (the **"JDC"**) of four (4) members. Subject to this Section 3.3 and Section 3.4 below, the JDC shall be the primary forum for exchange of information and review of Rhythm's progress in the development and registration of the Product and the JDC shall have the following responsibilities;

(i) reviewing the progress and results of Rhythm's development efforts;

(ii) reviewing material amendments or updates to the Development Plan;

(iii) agreeing procedure for filing of Joint Patents;

(iv) reviewing the progress of Camurus' technology transfer activities in respect of the Product as detailed in Section 6.2,



* CONFIDENTIAL TREATMENT REQUESTED. OMITTED PORTIONS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION PURSUANT TO RULE 406 PROMULGATED UNDER THE SECURITIES ACT OF 1933, AS AMENDED

(v) discuss publications regarding Product (such as abstract presentations at conferences, symposiums), and

(vi) Camurus will advise the JDC of any material issues that it is observing with respect to the characteristics of its FC Technology that are of potential utility to Rhythm in its development efforts with respect to its clinical and regulatory approach for the Product all to the extent covered by Rhythm's license rights in Section 2.1.

3.4 Meetings of the JDC:

(a) The JDC shall consist of an equal number of representatives appointed by each of Camurus and Rhythm. Each Party may, with notice to the other, substitute any of its members serving on the JDC and may invite ad hoc non-voting members as desired. The Parties may also, by mutual agreement, increase or decrease the number of members serving on the JDC; provided that the number of members representing each Party remains equal. Rhythm shall have the right to appoint one of its members to be the chairperson of the JDC, whose term shall run for so long as the JDC is in existence.

(b) The JDC shall meet as necessary but in any event no less frequently than semi-annually. Meetings of the JDC may take place by telephonic or video conference unless otherwise agreed. Minutes from the meetings of the JDC shall be kept by the Chairman of the JDC and circulated to Camurus members within a reasonable time for comments and approval. Minutes shall not become official until approved by both Parties in writing; minutes shall be presented for approval as the first order of business at the subsequent JDC meeting, or if it is necessary to approve the minutes prior to such subsequent meeting, then the Parties shall approve the minutes within thirty (30) days of receipt thereof.

(c) Each Party shall bear its own costs, including travel and lodging for its personnel serving on the JDC or attending meeting of the JDC.

(d) Each Party shall submit to the JDC members ten (10) days in advance of each JDC meeting reasonably detailed progress and other reports to keep the JDC informed of the current progress and status of the conduct of its respective activities.

(e) The quorum for JDC meetings shall be two (2) members, provided there are at least one (1) member from each of Camurus and Rhythm present.

(f) Information that otherwise falls under the definition of Confidential Information contained in reports made pursuant to Section 3.3 or Section 3.4 will be subject to the confidentiality provisions of Section 8.

(g) The term for the JDC shall commence on the date it is established by the Parties and continue until the Product receives regulatory approval in the United States or the EU.

3.5 Regulatory Filings and Approvals in the Territory. Rhythm shall have the responsibility for, and have final decision-making authority with respect to applying for and obtaining Regulatory Approvals for each Product in the Territory





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which applications and approvals shall be held by and in the name of Rhythm. Camurus shall provide assistance as reasonably requested in (i) compiling an IND and NDA; (ii) providing support for meetings with Regulatory Authorities and (iii) responding to questions from the Regulatory Authorities on technical (as opposed to pricing) questions on the Product and Camurus shall be reimbursed for such work at Camurus FTE Costs and reimbursement of documented expenses. Rhythm shall pay all user fees and other costs required to obtain and maintain such Regulatory Approvals.

3.6 Decision Not To Proceed After Ph1B PK/POC Clinical Trial. Without limiting the generality of the foregoing, on a Product-by-Product basis, Rhythm shall use Commercially Reasonable Efforts to perform the development activities through the completion of the first Ph1B PK/POC Clinical Trial with the Product as set forth in the Development Plan (the **"Ph1B PK/POC Study"**). Within ninety (90) days following receipt of the final report from the Ph1B PK/POC Study Rhythm shall make a determination whether or not to proceed with development. If Rhythm elects to proceed with further development following a successful Ph1B PK/POC Study then Rhythm shall thereafter provide Camurus with the semi-annual reports described in Section 3.1 (last sentence). If Rhythm elects to proceed with further development that constitutes re-performance of a Ph1B PK/POC Study on an alternative formulation of the Product that was the subject of an unsuccessful Ph1B PK/POC Study then Rhythm shall provide Camurus with an updated Development Plan covering subsequent development activities through the re-performance of such Ph1B PK/POC Study within sixty (60) days of the date it notifies Camurus of its decision to re-perform a Ph1B PK/POC Study. If Rhythm elects not to proceed with any additional development then Rhythm shall notify Camurus of such decision and terminate this Agreement in accordance with Section 11.3(e). If Rhythm fails to deliver notice to Camurus of Rhythm's decision to proceed with development or to terminate development within the 90-day period specified above then Camurus may terminate this Agreement as set forth in Section 11.3(e). Notwithstanding anything to the contrary herein, if Rhythm has not initiated dosing in the first Phase III study with the Product within [ ]* from the completion of the Ph1B PK/POC Study then Rhythm shall be required to terminate the Agreement in accordance with Section 11.3(e) and if Rhythm fails to terminate the Agreement then Camurus may terminate this Agreement as set forth in Section 11.3(e); provided, however that where Rhythm's failure to meet the foregoing [ ]* deadline results from any documented safety issues, manufacturing process issues, changes to legal requirements or requests from a Regulatory Authority, in each case to the extent outside Rhythm's control, then as long as Rhythm uses commercially reasonable efforts to overcome such issues, Rhythm shall not be required to terminate the Agreement as provided above in this Section 3.6 and Camurus shall not have the right to terminate the Agreement as provided above in this Section 3.6.

3.7 Development Data. To the extent permitted by law and subject to the terms and conditions set forth in this Section 3.7, Rhythm grants Camurus, its Affiliates and licensees the right to cross-reference those portions of any Development Data and regulatory filings, including INDs, NDAs and Regulatory Approvals, Controlled by Rhythm or its Affiliates that are directly related to safety and CMC aspects of the FC Technology and do not include information concerning the Drug and that have





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been submitted to the FDA or any other applicable Regulatory Authorities, in each case only to the extent that such right to cross-reference, is necessary or useful for Camurus', its Affiliates' and licensees' regulatory filings for other products that utilize the FC Technology, provided that such other products do not consist of a Product or a Competing Product. Camurus shall provide Rhythm with at least thirty (30) days advanced written notice of the regulatory agency and division which is receiving the cross-reference filing, before Camurus or any of its Affiliates or licensees exercises any right of cross-reference as contemplated under the foregoing provisions of this paragraph. Rhythm shall give Camurus, its Affiliates and licensees reasonable access and right to use (including the right to copy where reasonably required) to a copy of those portions of the Development Data, IND, NDA or Regulatory Approvals Controlled by Rhythm, its Affiliates or its Sublicensees that are directly related to safety and CMC aspects of the FC Technology and do not include information concerning the Drug , in each case only to the extent that such right of reasonable access and use is necessary or useful for development or regulatory filings for products that utilize the FC Technology and do not consist of a Product or a Competing Product. Camurus shall be responsible for reimbursement to Rhythm of any costs on an hourly fee basis incurred in connection with the provision of access to any data by Rhythm pursuant to this Section 3.7, including the costs of segregating data that relates solely to the FC Technology. Such costs shall be calculated on an hourly fee basis.

Camurus shall provide Rhythm, its Affiliates, Sublicensees with a right of cross-reference, a right of reasonable access and a right to use the development data and regulatory filings and regulatory approvals that Camurus or its Affiliates Control that are directly related to the FC Technology and that do not include information concerning any active pharmaceutical ingredient under development by Camurus or its Affiliates or licensees or sublicensees, in each case only to the extent that such right to cross-reference, such right of reasonable access and such right of use is necessary or useful for regulatory filings for the Product made or to be made by Rhythm, its Affiliates or Sublicensees. Rhythm shall provide Camurus with at least thirty (30) days advanced written notice of the regulatory agency and division which is receiving the cross-reference filing,

before Rhythm or any of its Affiliates or Sublicensees exercises any right of cross-reference as contemplated under the foregoing provisions of this paragraph. Rhythm shall be responsible for reimbursement to Camurus of any costs incurred in connection with the provision of access to any data by Camurus pursuant to this Section 3.7, including the costs of segregating data that relates solely to the FC Technology. Such costs shall be calculated on an hourly fee basis. It is noted that Camurus is currently negotiating sublicensing rights under its license agreement with [ ]* to [ ]* generated know-how pertaining to the FC Technology and that do not include information concerning any active pharmaceutical ingredient under development by [ ]* or its Affiliates. The Parties agree that until Camurus succeeds in securing such sublicensing rights from [ ]* under such license agreement that would permit Camurus to grant to Rhythm rights to such know-how as provided in Section 3.7, Camurus shall not sublicense or otherwise grant or provide the rights granted by Rhythm to Camurus in this Section 3.7 or Section 2.4 to [ ]* or its Affiliates.

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3.8 Reporting Adverse Events: Rhythm shall be responsible for reporting all adverse events (as defined in the then current edition of ICH Guidelines and any other relevant regulations or regulatory guidelines or any other safety problem of any significance, hereafter "Adverse Events") relating to the Product to the appropriate regulatory authorities in the countries in the Territory in accordance with the appropriate laws and regulations of the relevant countries and authorities. Rhythm shall ensure that its Affiliates and Sublicensees comply with all such reporting obligations. In the event that Rhythm knows or acquires knowledge that any Adverse Event relating to the Product is attributable to the FC Technology and is not attributable to the Drug, then Rhythm shall provide prompt written notice of such Adverse Event to Camurus. In addition, at each meeting of the JDC, a representative of Rhythm shall present to the JDC, and the JDC shall review, all Adverse Event relating to the Product that have occurred since the last meeting of the JDC

**4 COMMERCIALIZATION**

4.1 Responsibility. Rhythm shall have responsibility for, and final decision-making authority with respect to, commercialization of Products in the Territory at its own cost.

4.2 **Reserved**.

4.3 **Reserved**.

4.4 **Reserved**.

4.5 **Reserved**.

**5 PAYMENT OBLIGATIONS**

5.1 Signing Fee. Within the later to occur of (i) five (5) Business Days of the Effective Date and (ii) five (5) Business Days after receipt of an invoice from Camurus, Rhythm shall pay Camurus a non-refundable and non-creditable signing fee of [ ]* US Dollars (US$[ ]* payable by wire transfer of immediately available funds to an account designated in writing by Camurus.

5.2 Milestone Payments. On a Product-by-Product basis, Rhythm shall pay the following non-refundable, non-creditable amounts upon the achievement of the following events, within the later to occur of (i) sixty (60) calendar days after each such event and (ii) ten (10) Business Days after receipt of an invoice from Camurus for the milestone payment due with respect to each such event:

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| MILESTONE EVENT | MILESTONE PAYMENT |
|---|---|
| Upon completion (i.e. release of first eGMP batch of Product) of tech transfer and IND support for the filing of the first IND for the Ph1B PK/POC Study but in no event later than upon filing of said IND. | US$ [ ]*. |
| Successful completion of the Ph1B PK/POC Study.<br><br>Successful completion shall be deemed to have occurred if, after completion of the Ph1B PK/POC Study, Rhythm pursues additional development activities in preparation for the commencement of a Phase II Study. If, after completion of the Ph1B PK/POC Study, Rhythm does not pursue development activities in preparation for the commencement of a Phase II Study, Rhythm must within 90 days from completion of the Ph1B PK/POC Study (i) treat the Ph1B PK/POC Study as successfully completed and pay the associated $[ ]* Milestone Payment to Camurus, (ii) renegotiate and agree with Camurus as to the extent of Rhythm's obligation, if any, to have to pay | US$ [ ]*. |

| | |
|---|---|
| the $[ ]* Milestone Payment Milestone Payment associated with successful completion of the Ph1B PK/POC Study or (iii) terminate this Agreement as set forth in Section 11.3(e). Nothing in this paragraph shall be construed as requiring that any Milestone Payment be paid or payable more than once upon the first achievement of the applicable Milestone and any renegotiated Milestone Payment under this paragraph shall be in lieu of the $[ ]* Milestone Payment payable by Rhythm to Camurus upon successful completion of the Ph1B PK/POC Study with the Product. | |
| First dosing of the Product in the first Phase III Clinical Trial. | US$ [ ]*. |
| Filing of the first NDA for the Product in the United States. | US$ [ ]*. |
| First NDA Approval for the Product in the United States. | US$ [ ]*. |





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|---|---|
| Filing of the first NDA for the Product in the EU. | US$ [ ]*. |
| First NDA Approval for the Product in the EU. | US$ [ ]*. |

In no event shall any development or approval milestone payment be payable more than once for each Product and in no event shall the aggregate amount of all development and approval milestone payments payable with respect to each Product exceed US$[ ]*.

5.3 Royalties.

On a Product-by-Product basis, Rhythm shall pay to Camurus royalties (**"Royalties"**) equal to the percentages on the below annual Net Sales of Product in the Territory as described below.

| **Product Net Sales Tier** | **Royalty** |
|---|---|
| For the portion of aggregate annual Net Sales of Product of less than [ ]* in the Territory | [ ]*% |
| For the portion of aggregate annual Net Sales of Product equal to or greater than [ ]* and less than [ ]* in the Territory | [ ]*% |
| For the portion of aggregate annual Net Sales of Product equal to or greater than [ ]* and less than [ ]* in the Territory | [ ]*% |
| For the portion of aggregate annual Net Sales of Product equal to or greater than [ ]* in the Territory | [ ]*% |

Royalties shall be payable for a time period calculated on a Product-by-Product and country-by-country basis in respect of the licenses granted to Rhythm by Camurus hereunder beginning on the First Commercial Sale of such Product in such country and ending on the later of (a) [ ]* after the date of such First Commercial Sale of such Product in such country and (b) the expiration of the last to expire Valid Claim covering such Product within (i) Camurus Platform Patents or (ii) Patent Rights claiming Collaboration Inventions, in such country. The period during which Royalties are payable in respect of a Product in any country is referred to as the **"Royalty Term"**. Notwithstanding the foregoing, royalty rates shall be reduced by [ ]*% with respect to sales of a Product in any country of the Territory during the Royalty Term if the sale, manufacture or use of the Product in such country is not covered by any Valid Claim within (1) the Camurus Platform Patents or (2) Patent Rights covering Collaboration Inventions and in each case there is a Generic





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Product sold in such country. In no event may the Royalties set forth first above in this Section 5.3 be reduced by more than [ ]*% by application of one or more royalty reduction provisions in this Agreement.

5.4 Sales Milestones. Rhythm shall pay the following non-refundable, non-creditable sales milestones upon the achievement of the following sales levels for all Products in the Territory. Payment for any such milestones shall be made within the later to occur of (i) sixty (60) calendar days after the achievement of the applicable milestone and (ii) ten (10) Business Days of receipt of appropriate original invoice from Camurus. Sales milestones will be paid in accordance with the schedule below, with each milestone paid only once and on the first occurrence of the event, as set forth below. In the event more than one sales milestone is reached in the same year, then each such milestone shall be due that year.

| **Product Event** | **Amount** |
|---|---|

| | | | |
|---|---|---|---|
| When Net Sales of a Product in the Territory first exceed US$[ | ]* in a calendar year | US$[ | ]* |
| When Net Sales of a Product in the Territory first exceed US$[ | ]* in a calendar year | US$[ | ]* |
| When Net Sales of a Product in the Territory first exceed US$[ | ]* in a calendar year | US$[ | ]* |
| When Net Sales of a Product in the Territory first exceed US$[ | ]* in a calendar year | US$[ | ]* |

In no event shall sales milestone payments be payable in excess of US$[ ]*.

5.5 Third Party Licenses. If Rhythm, to avoid infringement of Third Party Patent Rights in connection with the Product, to the extent such infringement relates the use of Camurus IP, obtains a license under an issued patent(s) from such Third Party in any country in the Territory to make or have made, use, offer to sell, sell, have sold, import, or otherwise exploit a Product pursuant to the licenses granted hereunder, then Royalties calculated on Net Sales of such Product in such country shall, subject to Section 5.3, be offset by [ ]* of any royalties paid by Rhythm as and when paid to such Third Party under such Third Party license. For the avoidance of doubt, payments to such Third Party that may be offset shall be limited to such payments allocable to the license of such technology (excluding, for example, any payments in respect of development services or the supply of products) and allocable to the Product (excluding, for example, other uses of such technology by Rhythm). Rhythm shall provide Camurus with copies of the relevant terms of such license agreement with such Third Party and other material information in its possession in respect of such technology subject to Camurus undertaking confidentiality in respect of such disclosures by Rhythm. Rhythm shall consult with Camurus prior to entering into any such license agreement and provide Camurus a reasonable opportunity to provide its views on the need or benefit to obtain such license and the financial and other terms thereof. If Rhythm exercises





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its right in Section 5.6 to buy down Royalties, then Rhythm's rights to offset future royalties paid to Third Parties as provided in this Section 5.5 shall cease.

5.6 Royalty Buy-Down. Rhythm shall have the right on a Product-by-Product basis, exercisable at any time during a period beginning on the First Commercial of the applicable Product and ending on the [ ]* anniversary thereof, to buy down the Royalties to a flat rate of [ ]* on Net Sales of such Product by making payment to Camurus of a one-time non-refundable and non-creditable amount of [ ]*. The reduced royalty rate shall apply to all Net Sales of such Product from the calendar quarter following the calendar quarter in which said lump-sum payment is received by Camurus. Any sales milestones that would otherwise become due pursuant to Section 5.4 after the calendar quarter in which said payment was received by Camurus, shall no longer be payable.

5.7 Royalty and Milestone Reports. Royalty payments shall be paid within sixty (60) calendar days after the first day of January, April, July and October of each year following the First Commercial Sale of a Product, and shall include a written report with respect to the preceding quarter (the **"Payment Report"**) stating: (a) the gross sales and number of units sold of each presentation of the Product sold by Rhythm, its Affiliates and Sublicensees in each country in the Territory; (b) Net Sales of the Product sold by Rhythm, its Affiliates and Sublicensees, during such quarter on a country-by-country basis; (c) the date of any First Commercial Sale of the Product in each country during such quarter, (d) currency exchange rates used in determining the Royalties and (e) a calculation of the amounts due to Camurus. Rhythm shall notify Camurus in writing within sixty (60) calendar days after the achievement of any milestone described in Section 5.2 or Section 5.4.

5.8 Payments.

(a) All payments due under this Agreement shall be paid in immediately available funds in US Dollar to the bank account designated in writing by Camurus, as the case may be. To the extent Net Sales are accrued in currencies other than US Dollar, Net Sales shall be converted to US Dollar, as the case may be, at the average daily rate of exchange for the applicable calendar quarter as published by Financial Times (UK edition). The calculation of the average rate of exchange shall be stated in terms of US Dollar per foreign currency units.

(b) All payments hereunder are exclusive of any taxes, fees or charges imposed by any local or national authority. In the event that Rhythm reasonably determines that any tax, duty or other levy is required to be paid or withheld on account of Royalties or other payments payable to Camurus under this Agreement, Rhythm shall make such withholding payments as required and subtract such withholding payments from the payments to be made to Camurus as set forth in this Section 5, or, if applicable, Camurus will reimburse Rhythm or its designee(s) for the amount of such required withholding payments that are not subtracted from the payments made to Camurus as set forth in this Section 5, within fifteen (15) days of notice to Camurus. Rhythm shall provide Camurus with documentation of such withholding and payment in a manner that is satisfactory for purposes of reporting to the U.S. Internal Revenue Service. Any withholdings paid by Rhythm shall be for the benefit of Camurus.

(c) Any payments that are not paid within the date such payments are due under this Agreement shall bear interest at an annual rate of interest equal to the London Interbank Offered Rate (**"LIBOR"**), plus five (5) percentage points, calculated on the number of days such payment is delinquent.

5.9 Books and Records; Audit Rights. Rhythm shall keep full and true books of accounts and other records in sufficient detail so that the Royalties payable hereunder can be properly ascertained. Rhythm shall, at the request of Camurus, permit a nationally recognized independent certified public accountant selected by Camurus and reasonably acceptable to Rhythm to have access during ordinary business hours, to such books and records as may be necessary to determine the correctness of any Payment Report or payment made under this Agreement or to obtain information as to Royalties and milestones payable in case of failure to report or pay pursuant to the terms of this Agreement. The auditor shall execute a written confidentiality agreement with Rhythm and shall disclose to Camurus only the amount and accuracy of payments reported and actually paid or otherwise payable under this Agreement. The auditor shall send a copy of the report to Rhythm at the same time it is sent to Camurus. Such examination shall be conducted (a) after at least thirty (30) days prior written notice from Camurus, (b) at the facility(ies) where such books and records are maintained, and (c) no more frequently than once in any calendar year or more than once with respect to a particular year. Camurus shall be responsible for expenses for the independent certified public accountant, except that Rhythm shall reimburse Camurus in full thereof if the independent accountant determines the Royalties and milestones paid by Rhythm to Camurus are less than ninety-five percent (95%) of the amount actually owed for the period of the audit. As a condition to any sublicense granted by Rhythm hereunder, Rhythm shall ensure that Camurus has the same audit rights as those described in this Section 5.9 with respect to any such Rhythm Affiliate or Sublicensee.

**6 MANUFACTURE**

6.1 Identification of CMO. Rhythm shall have responsibility for, and final decision-making authority with respect to, the manufacture of Product for non-clinical, clinical and commercial use and sale in the Territory. Rhythm, or its designated CMO as applicable, shall be EU and US GMP approved and able to manufacture according to the Regulatory Approvals in the applicable countries in the Territory. Until the tech transfer process to Rhythm or its CMO has been successfully completed as set forth in Section 6.2, Camurus may procure such supply of Rhythm's non-commercial requirements of Product from Camurus' existing CMO at Camurus' Manufacturing Cost. In such case, the Parties shall enter into separate supply agreements governing the terms and conditions of such non-commercial supply from Camurus' CMO to Rhythm and shall use good faith efforts to negotiate and enter into the foregoing within one hundred and twenty (120) days from the Effective Date.

6.2 Technology Transfer. Camurus shall use Commercially Reasonable Efforts to provide such of its manufacturing technology as may be reasonably necessary to enable Rhythm or its designated CMO to manufacture the Product for non-clinical, clinical and commercial use, and shall use Commercially Reasonable Efforts to





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provide technical assistance to enable the use of such manufacturing technology to manufacture the Product. Prior to such technology transfer, the Parties will agree upon a technology transfer plan and corresponding budget. Rhythm shall reimburse Camurus it's out of pocket costs and expenses as well as Camurus' FTE Costs incurred in providing such technology transfer and technical assistance. Camurus shall be reimbursed by Rhythm on a monthly basis, within thirty (30) days of receipt of an invoice setting forth such costs and expenses.

6.3 Rhythm Supply Agreement. If Rhythm uses a CMO, as soon as commercially possible Rhythm shall enter into one or more Rhythm Supply Agreements with the CMO covering the tech transfer, process development, scale-up and manufacture of Product.

**7 INTELLECTUAL PROPERTY**

7.1 Trademarks.

(a) Rhythm shall have the right to select, and shall register and maintain, at its expense, such Product Trademarks as shall be used for the promotion, marketing and sale of the Product in the Territory. Rhythm shall own such Product Trademarks and all goodwill associated therewith.

(b) Rhythm may use the Camurus Trademark for commercialization of Product in the Territory. If Rhythm opts to use the Camurus Trademark, save to the extent Rhythm may be required to do so by a Regulatory Authority or pursuant to the requirements of a Regulatory Approval, Rhythm shall not conceal or otherwise obscure, remove or otherwise interfere with the Camurus Trademark. Rhythm shall not register or use any Trademark confusingly similar to any Camurus Trademark or any other Trademarks used by Camurus with the FC Technology. Rhythm shall ensure that each reference to and use of the Camurus Trademark in any marketing material related to Product is accompanied by an acknowledgement that the Camurus Trademark is owned by Camurus and used by Rhythm under license. Rhythm shall adhere to any reasonable requests from Camurus relating to Rhythm's use of the Camurus Trademark.

7.2 Ownership of Collaboration Inventions. Subject to the terms hereof, including the licenses and other rights granted hereunder, all Collaboration Inventions shall be owned as follows:

(a) All Collaboration Inventions, including Joint Inventions, relating specifically to [ ]*, shall be exclusively owned by Camurus.

(b) All Collaboration Inventions, including Joint Inventions, relating specifically to [ ]*, shall be exclusively owned by Rhythm.

(c) The ownership of Collaboration Inventions not owned by Camurus or Rhythm in accordance with Section 7.2(a) or Section 7.2(b) shall be determined with reference to inventorship under U.S. patent law. If the Parties fail to agree with respect to inventorship, the dispute will be referred to a Third Party U.S. patent attorney acceptable to each of the Parties for Expert Determination as provided in Exhibit 7.2(c). The Parties shall jointly own all Collaboration Inventions that are

Joint Inventions, other than those covered in Section 7.2(a) or Section 7.2(b), and, subject to the rights granted each Party under this Agreement, each Party may use, sell, keep, license or assign its interest in Joint Inventions and otherwise undertake all activities a sole owner might undertake with respect to such Joint Inventions, without the consent of and without accounting to the other Party. "**Joint Inventions"** means Collaboration Inventions for which it is determined, in accordance with the patent law of the United States, that both: (i) one or more employees, consultants or agents of Camurus or any other persons obligated to assign such Collaboration Invention to Camurus; and (ii) one or more employees, consultants or agents of Rhythm or any other persons obligated to assign such Collaboration Invention to Rhythm, are inventors of such Collaboration Invention. For any Joint IP that could be the subject of an application for a Patent Right, each Party, in conjunction with such Party's patent counsel will make an initial determination of inventorship prior to filing the application therefor to confirm that it is Joint IP. Each Party will provide information and records relevant to such determination to the other Party and such patent counsel

(d) Subject to appropriate confidentiality undertakings, each Party shall promptly notify the other Party when it learns a Collaboration Invention has been made and promptly after the completion of invention disclosure statements for such Collaboration Invention (or, if any provisional or other patent applications are filed claiming such invention, promptly after such filing), and, to the extent a Party is granted rights hereunder in such Collaboration Invention, shall provide a copy of the same to the other Party.

(e) For the avoidance of doubt, neither Party is granted any license rights to any intellectual property rights of the other Party, which may be required for such Party to use a Collaboration Invention, unless otherwise expressly granted herein.

(f) Each of the Parties shall do all such acts and things and execute all such deeds and documents as may be necessary or desirable for them to perfect their rights of ownership as specified in this Section 7.2 and otherwise implement the provisions of this Section 7. Each Party shall, and shall cause its applicable Affiliates, Third Party subcontractors, and their respective employees and agents to, perform at the requesting Party's cost all reasonable acts reasonably requested, including the execution of confirmatory deeds and assignment documents of Patent Rights as may be necessary or desirable for them to perfect their title therein in accordance with the forgoing provisions of this Section.

7.3 Prosecution of Patents.

(a) Patent Prosecution of Camurus IP. Camurus shall control the Prosecution of the Patent Rights within Camurus Platform IP ("**Camurus Platform Patents**") at its own cost and expense using Commercially Reasonable Efforts to Prosecute all patent applications forming part of Camurus Platform Patents to grant with Valid Claims, including conducting any necessary or desirable oral or written proceedings. Camurus shall provide Rhythm with a copy of each new draft application and replies to substantive office actions within the Camurus Platform Patents (including, for clarity, divisional and continuation applications), and shall keep Rhythm informed of all material developments in relation to Camurus

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Platform Patents and shall provide Rhythm with copies of relevant documents related to the Prosecution of Camurus Platform Patents in the United States and EU and any PCT application. Camurus shall provide relevant documents related to the Prosecution of the Camurus Platform Patents in all other countries in the Territory upon request from Rhythm. In the event that, having filed, Camurus declines to further Prosecute any Camurus Platform Patents in any country of the Territory, Camurus shall provide Rhythm with written notice thereof. Such notice shall be given at least sixty (60) days prior to the expiration of any official substantive deadline relating to such activities. In any such circumstances and provided that no earlier licensee of Camurus has assumed the right to Prosecute such Camurus Platform Patents Rhythm shall have the right to decide that Rhythm should continue to Prosecute such Camurus Platform Patents owned by Camurus at Rhythm's expense and in such case Rhythm shall give written notice to Camurus; provided that if Camurus' decision to decline to further Prosecute any pending Camurus Platform Patents is as a result of the withdrawal of an unpublished patent application and the reason for such withdrawal was to enable the filing of another patent application claiming the same inventions, Rhythm shall not have the right to decide that Rhythm should continue to Prosecute the withdrawn unpublished patent application. Camurus shall upon receipt of any such notice from Rhythm transfer to Rhythm copies of all of its files relating to the relevant Camurus Platform Patents and at Rhythm's reasonable cost and expense execute any documents to otherwise transfer control of such Prosecution to Rhythm. Camurus shall remain the owner of such Camurus Platform Patents and Rhythm shall provide Camurus the same information and rights required under this Section 7.3(a) to be provided Rhythm concerning the Prosecution of such Camurus Platform Patents. Rhythm may deduct the prosecution costs with respect to such Camurus Platform Patents from the royalties payable to Camurus under this Agreement. This Section 7.3 (a) shall apply mutatis mutandis to Patent Rights within Collaboration Inventions solely owned by Camurus pursuant to Section 7.4.

(b) Patent Prosecution of Collaboration Product Patents and Rhythm Product Patents in the Territory. Rhythm shall control the Prosecution of (i) the Patent Rights to any and all Collaboration Inventions owned by Rhythm pursuant to Section 7.2(b), Section 7.2(c) if solely owned by Rhythm or Section 7.4 (jointly **"Collaboration Product Patents"**), and (ii) the Rhythm Product Patents, in the Territory at Rhythm's expense using Commercially Reasonable Efforts to Prosecute all patent applications forming part of the Collaboration Product Patents to grant with Valid Claims, including conducting any necessary or desirable claims or oral or written proceedings. With respect to the Collaboration Product Patents, Rhythm shall provide Camurus the same information and rights required under Section 7.3(a) to be provided Rhythm concerning the Prosecution of the Camurus Platform Patents. In the event that, having filed, Rhythm declines to further Prosecute any Collaboration Product Patents in any country in the Territory, Rhythm shall provide Camurus with written notice thereof. Such notice shall be given at least sixty (60)

days prior to the expiration of any official substantive deadline relating to such activities. In any such circumstances Camurus shall have the right to decide that Camurus should continue to Prosecute such Collaboration Product Patents at Camurus' expense and in such case Camurus shall give written notice to Rhythm. Rhythm shall upon receipt of any



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such notice from Camurus transfer to Camurus all of its files relating to the relevant Collaboration Product Patents and at Camurus' reasonable cost and expense execute any documents to otherwise transfer control of such Prosecution to Camurus. Rhythm shall remain the owner of such Collaboration Product Patents and Camurus shall provide Rhythm the same information and rights required to be provided Camurus under this Section 7.3(b) concerning the Prosecution of such Collaboration Product Patents.

(c) Joint Patents. With respect to the Prosecution of patent applications claiming Joint Inventions subject to Section 7.2(c) (**"Joint Patents"**), Rhythm shall have the right to take such actions as are necessary or appropriate to Prosecute Joint Patents at its sole expense; *provided*, that all such patent applications and patents shall be owned jointly. Rhythm shall furnish Camurus with copies of such Joint Patents and other related correspondence relating to such Joint Inventions to and from patent offices throughout the Territory and permit Camurus to offer its comments thereon before Rhythm makes a submission to a patent office. Rhythm shall inform Camurus of the countries in which it intends to file patent applications. Camurus shall offer its comments promptly, including any request that the patents be filed in additional countries; *provided*, that Rhythm shall determine the appropriate action after considering in good faith any comments or requests from Camurus, and *further provided* that in the event that delay would jeopardize any potential patent right, Rhythm shall have the right to proceed without awaiting Camurus' comments. If Rhythm determines in its sole discretion not to Prosecute any patent or patent application within the Joint Patents in any country, and provided that no other patent applications or patents claiming the same or similar subject matter are then pending or issued in that same country, then Rhythm shall provide Camurus with sixty (60) days prior written notice (or such shorter time period that would permit Camurus a reasonable opportunity to respond in a timely manner) of such determination and Camurus shall have the right and opportunity to Prosecute such patent application or patent on behalf of the Parties at Camurus' sole cost and expense. Camurus shall provide Rhythm the same information and rights required under this Section 7.3(c) to be provided Camurus concerning the Prosecution of such Joint Patents.

(d) As promptly as practicable after the Effective Date (but in no event later than one hundred and twenty (120) days after the Effective Date), Rhythm shall file a patent application with the United States Patent and Trademark Office [ ]*. Camurus shall provide Rhythm with such information and/or invention disclosures reasonably requested by Rhythm, and shall otherwise cooperate with all reasonable requests made by Rhythm, in connection with the preparation, filing and prosecution of such patent application. Notwithstanding anything express or implied anywhere else in this Agreement, all of the inventions claimed in such patent application (other than those of such inventions that are already owned solely by Rhythm as of the Effective Date) shall be deemed and treated, for all purposes of this Agreement, as Collaboration Inventions that are owned solely by Rhythm pursuant to Section 7.2(b) hereof. For clarity, such patent application and all other Patent Rights related to those inventions that are deemed and treated, for all purposes of this Agreement, as Collaboration Inventions shall be deemed and treated as Collaboration Product Patents for all purposes of this Agreement and be subject inter alia to Section 7.3 (b).



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(e) Each Party shall at the expense of the requesting Party execute such documents and take such other actions as may be reasonably requested by the other Party in conjunction with prosecution of patents pursuant to this Section 7.3.

7.4 Camurus Platform Patents and Collaboration Product Patents. If, after the Effective Date, any Collaboration Invention relates both to [ ]*, on the one hand, and [ ]*, on the other hand, and patent claims can be made based on the same data, Patent Right or study result, where appropriate Camurus shall, in consultation with Rhythm, file separate patent applications on the same day to any aspect relating to [ ]*, on the one hand, and [ ]*, on the other hand, separately. Any such applications relating specifically to [ ]* shall become part of the Rhythm Collaboration IP and, therefore, shall be exclusively owned by Rhythm, and any such applications relating to [ ]* shall become part of Camurus Platform IP hereunder and, therefore, shall be exclusively owned by Camurus. In the event that the provisions of this Section 7.4 are applicable to any Collaboration Invention, the provisions of this Section 7.4 shall be applied to such Collaboration Invention before the provisions of any of Section 7.2(a) or Section 7.2(b) are given effect with respect to such Collaboration Invention.

7.5 Employee Assignment. Each Party shall ensure that any employee of that Party involved in the performance of this Agreement shall be employed on legally binding written terms which require the assignment of all Patent Rights and Know-How resulting from work carried out by that employee to the employing Party. Each Party shall be responsible for all payments to its employees or others in respect of obtaining rights to any such Patent Rights and Know-How.

7.6 Patent Term Extensions. For all patents within any Patent Rights relating to or claiming a Product for which NDA Approval has been obtained, the Parties shall use reasonable efforts, in each country where NDA Approval for a Product has been obtained and the law of such country permits application for a patent term extension (or any supplementary certificate), to apply for a patent term extension (or any supplementary certificate) for one or more selected patent within such Patent Rights chosen at Rhythm's reasonable discretion with respect to the Territory. Each Party agrees to cooperate with the other Party in the exercise of the authorizations granted under this Section, and to execute such documents and take such additional action as the other Party may reasonably request in connection therewith.

7.7 Third Party Intellectual Property. Each Party shall bring to the attention of the other Party all information regarding potential infringement or misappropriation of Third Party Patent Rights as a result of the manufacture, use, importation, offer for sale, or sale of Product in the Territory.

The Parties shall discuss such information and decide how to handle the matter. This Section 7.7 shall not be interpreted as placing on either Party a duty of inquiry regarding Third Party Intellectual Property rights beyond what is customary for the industry.

7.8 Third Party Infringement. In the case where either Party believes that the development, manufacture, use or sale of the Product or a Competing Product by a Third Party in the Licensed Field infringes any Camurus Platform Patents, any other Patent Rights licensed by Camurus to Rhythm pursuant to this Agreement,





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any other Collaboration Product Patents covering the Product (including any method of making or using the same) or the Joint Patents (each, an **"Infringing Activity"**), such Party shall disclose full details of the potential infringement to the other Party. In addition, if either Party believes that development, manufacture, use or sale of the Product or a Competing Product by a Third Party in the Licensed Field infringes any other Patent Rights covering the Product, such Party shall disclose full details of the potential infringement to the other Party. The right to prosecute Infringing Activity pursuant to this Agreement is set out in either Section 7.9 or Section 7.10, as applicable. If the Parties fail to agree with respect to whether an Infringing Activity is subject to Section 7.9 or Section 7.10, the dispute will be referred to a Third Party U.S. patent attorney acceptable to each of the Parties for Expert Determination as provided in Exhibit 7.2(c). For the avoidance of doubt, it is understood and agreed that in this section 7.8 and in Section 7.9, Patent Rights claiming the Product do not include Rhythm Product Patents or any other Patent Rights owned or Controlled by Rhythm (other than Collaboration Product Patents).

7.9 Enforcement with respect to Collaboration Product Patents and Joint Patents. Where an infringement of (x) any Patent Rights specifically claiming the Product (including any method of making or using the same) or (y) any Joint Patents by an Infringing Activity occurs in one or more countries of the Territory, Rhythm shall have the first right to, but shall not be obliged to, at its own cost and expense enforce the same in accordance with the below subparagraphs (i) to (iii).

(i) Rhythm shall have sole conduct of the claim and any proceedings including any counterclaim for invalidity or unenforceability or any declaratory judgment action and including the right to settle. Where Rhythm decides to commence proceedings in relation to any such Patent Rights claiming specifically the Product (including any method of making or using the same) or any Joint Patents it shall be entitled to require Camurus to join Rhythm as co-plaintiff and Camurus shall have the right to join as co-plaintiff. In such case Camurus shall provide all necessary assistance to Rhythm in relation to any such proceeding and Rhythm shall on demand by Camurus pay or promptly reimburse Camurus for the costs of such activity unless Camurus elects to be separately represented (which shall be at Camurus' discretion), in which case such separate representation shall be at Camurus' cost and expense;

(ii) if Rhythm succeeds in any such infringement proceedings whether at trial or by way of settlement, the proceeds of any award or damages or settlement in respect of such infringement proceedings shall first be applied to reimburse (a) an amount equal to Rhythm' costs of taking the proceedings and (b) an amount equal Camurus' costs, with the remainder being retained by Rhythm less [ ]* per cent [ ]* thereof, which amount shall be paid to Camurus;

(iii) if Rhythm fails to take any such proceedings in respect of any such Patent Rights claiming specifically the Product (including any method of making or using the same) or any Joint Patents in the Territory, Camurus may give Rhythm written notice requesting Rhythm to take such proceedings within thirty (30) days of the date of notice and if Rhythm fails to take such action within said period, Camurus shall, subject to the prior written consent of Rhythm, be entitled to do so at its own cost and expense. If Rhythm gives such consent then Camurus shall be entitled to





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require Rhythm to join Camurus as co-plaintiff and Rhythm shall have the right to join as co-plaintiff. In such case, Rhythm shall provide all necessary assistance to Camurus in relation to such proceedings and Camurus shall on demand by Rhythm pay or promptly reimburse Rhythm for the costs of such activity, unless Rhythm elects to be separately represented (which shall be at Rhythm' discretion), in which case such separate representation shall be at Rhythm's cost and expense. If Camurus succeeds in any such proceedings, the proceeds of any award or damages or settlement in respect of such proceedings shall first be applied to reimburse (a) an amount equal to Camurus' costs of taking the proceedings and (b) an amount equal Rhythm' costs referred to in this Section 7.9(iii), with the remainder being retained by Camurus, less [ ]* per cent [ ]* thereof, which amount shall be paid to Rhythm. Camurus shall not enter into a settlement, consent judgment or other voluntary final disposition of an action or claim or counterclaim under this Section 7.9 without the prior written approval of Rhythm, such consent not to be unreasonably withheld. For the avoidance of doubt, it is understood and agreed that in this Section 7.9, Patent Rights specifically claiming the Product (including any method of making or using the same) do not include Rhythm Product Patents or any other Patent Rights owned or Controlled by Rhythm (other than Collaboration Product Patents).

7.10 Enforcement with respect to Camurus Platform Patents. Where an infringement of Camurus Platform Patents not specifically claiming the Product (including any method of making or using the same) by an Infringing Activity is occurring in one or more countries of the Territory, Camurus shall have the right, but shall not be obliged, at its own cost and expense to enforce the same. Camurus shall be entitled to require Rhythm to join Camurus as co-plaintiff. In such case Rhythm shall provide all necessary assistance to Camurus in relation to any such proceeding and Camurus shall on demand by Rhythm pay or promptly reimburse Rhythm for the costs of such activity. If Camurus succeeds in any such infringement proceedings whether at trial or by way of settlement, the proceeds of any award or damages or settlement in respect of such infringement proceedings shall first be applied to reimburse (a) an amount equal to Camurus' costs of taking the proceedings and (b) an amount equal Rhythm's costs, if any, with the remainder being retained by Camurus less [ ]* per cent [ ]* thereof, which amount shall be paid to Rhythm.

Camurus shall have the sole right to settle such proceedings, provided that such settlement does not include a license or covenant not to sue under the Camurus Platform IP or causes Rhythm to incur any losses in which case Rhythm's consent to the terms of such license shall be required, such consent not to be unreasonably withheld, conditioned or delayed. If Camurus elects not to enforce any such Camurus Platform Patents, then Rhythm shall have the right, but shall not be obliged, at its own cost and expense to do so in accordance with the following, subject to the prior written consent of Camurus. If Camurus gives such consent, then the following procedures shall apply in these circumstances:

(i) Where Rhythm has requested and been granted approval by Camurus to commence proceedings in relation to any such Camurus Platform Patents not specifically claiming the Product (including any method of making or using the same), Rhythm shall be entitled to require Camurus to join Rhythm as co-plaintiff and Camurus shall have the right to join as co-plaintiff. In such case Camurus shall provide all necessary assistance to Rhythm in relation to any such proceeding and





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Rhythm shall on demand by Camurus pay or promptly reimburse Camurus for the costs of such activity unless Camurus elects to be separately represented (which shall be at Camurus' discretion), in which case such separate representation shall be at Camurus' cost and expense;

(ii) if Rhythm succeeds in any such infringement proceedings whether at trial or by way of settlement, the proceeds of any award or damages or settlement in respect of such infringement proceedings shall first be applied to reimburse (a) an amount equal to Rhythm' costs of taking the proceedings and (b) an amount equal to Camurus' costs referred in this Section 7.10, with the remainder being retained by Rhythm less [ ]* per cent [ ]* thereof, which amount shall be paid to Camurus;

(iii) Rhythm shall not enter into a settlement, consent judgment or other voluntary final disposition of an action or claim or counterclaim under this Section 7.10 without the prior written approval of Camurus, such consent not to be unreasonably withheld.

7.11 Hatch-Waxman Certifications. If either Party (i) reasonably believes that a Third Party may be filing or preparing or seeking to file a generic or abridged NDA that refers to or relies on regulatory documentation for a Product that was submitted by Rhythm to any Regulatory Authority, (ii) receives any notice of certification regarding any Patent Rights included in Camurus Patent Rights (i.e., Patent Rights Controlled by Camurus) or Rhythm Patent Rights (i.e., Patent Rights Controlled by Rhythm) pursuant to the Hatch-Waxman Act claiming that any such Patent Rights are invalid or unenforceable or claiming that the any such Patent Rights will not be infringed by the manufacture, use, marketing or sale of a product for which an ANDA is filed, or (iii) receives any equivalent or similar certification or notice in any other jurisdiction, it shall notify the other Party in writing, identifying the alleged applicant or potential applicant and furnishing the information upon which such determination is based, and provide the other Party a copy of any such notice of certification within five (5) days of receipt and the Parties' rights and obligations with respect to any legal action as a result of such certification shall be as set forth above in Sections 7.9 or 7.10.

## 8 CONFIDENTIALITY

8.1 Except to the extent expressly authorized by this Agreement including in Sections 8.3 and 8.4 or otherwise agreed in writing, each Recipient and its Affiliates and its Sublicensees and licensees in possession of Confidential Information of the Disclosing Party shall maintain such Confidential Information as confidential and use it only for the purposes of this Agreement in accordance with this Section 8. This obligation shall continue during the term of this Agreement and for a period equal to ten (10) years after the date of expiration or termination of this Agreement; provided, however, that this obligation shall continue to apply after such ten (10) year period to any Know-How, development data, other data, regulatory filings and other information disclosed, provided, licensed, transferred or otherwise made available by either Party to the other Party under this Agreement, until such time as such Know-How, development data, other data, regulatory filings and other information becomes exempt pursuant to subparagraphs (i) through (v) below. Each





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Party shall guard such Confidential Information using the same degree of care as it normally uses to guard its own confidential, proprietary information of like importance, but in any event no less than reasonable care. Notwithstanding the foregoing, the Recipient of the categories of Confidential Information identified in Sections 1.16 (i)-(iv) inclusive shall be relieved of the confidentiality and limited use obligations of this Agreement to the extent that the Recipient establishes by written evidence that:

(i) the Confidential Information was previously known to the Recipient from sources other than the Disclosing Party at the time of disclosure and other than under an obligation of confidentiality and non-use;

(ii) the Confidential Information was generally available to the public or otherwise part of the public domain at the time of its disclosure; or

(iii) the Confidential Information became generally available to the public or otherwise part of the public domain after its disclosure to the Recipient Party other than through any act or omission of the Recipient Party in breach of this Agreement; or

(iv) the Confidential Information is acquired in good faith in the future by the Recipient Party from a Third Party who has a lawful right to disclose such information and who is not under an obligation of confidence to the Disclosing Party with respect to such information; or

(v) the Confidential Information is subsequently developed by or on behalf of the Recipient Party without use of the Disclosing Party's Confidential Information.

8.2 For clarity, specific aspects or details of Confidential Information shall not be deemed to be within the public domain or in the possession of the Recipient Party merely because the Confidential Information is embraced by more general information in the public domain or in the possession of the Recipient Party. Further, any combination of Confidential Information shall not be considered in the public domain or in the possession of the Recipient Party merely because individual elements of such Confidential Information are in the public domain or in the possession of the Recipient Party unless the combination is in the public domain or in the possession of the Recipient Party.

8.3 Notwithstanding the above obligations of confidentiality and non-use a Recipient may disclose Confidential Information:

(i) to a Regulatory Authority as reasonably necessary to obtain and maintain Regulatory Approval in a particular jurisdiction to the extent consistent with the licenses granted under terms of this Agreement, provided that reasonable effort will be taken to ensure confidential treatment of such information.

(ii) disclose Confidential Information: (a) to the extent such disclosure is reasonably necessary to comply with the order of a court; or (b) to the extent such disclosure is required to comply with a legal requirement, including to the extent such disclosure is required in publicly filed financial statements or other public statements or filings under rules governing a stock exchange or pursuant to



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applicable securities laws or regulations (e.g., the rules of the United States Securities and Exchange Commission, NASDAQ, NYSE, or any other stock exchange on which securities issued by either Party may be listed); provided, to the extent possible bearing in mind such legal requirements and subject to the next subsequent sentence of this Section 8.3.(ii), such Party shall provide the other Party with a copy of the proposed text of such statements or disclosure five (5) business days in advance of the date on which the disclosure is to be made to enable the other Party to review and provide comments, unless a shorter review time is agreed. If compliance with a legal requirement requires filing of this Agreement, the filing Party shall to the extent possible seek confidential treatment of portions of this Agreement from the relevant competent authority to the extent that such confidential treatment is available pursuant to applicable law and shall provide the other Party with a copy of the proposed filings at least five (5) business days prior to filing for the other Party to review any such proposed filing and provide comments. Each Party agrees that it will obtain its own legal advice with regard to its compliance with legal requirements and will not rely on any statements made by the other Party relating to such legal requirements; and

(iii) by filing or prosecuting Patent Rights, the filing or prosecution of which is contemplated by this Agreement, without violating Section 8.1; it being understood that publication of such filings occurs in some jurisdictions within eighteen (18) months of filing, and that such publication shall not violate the above secrecy provision.

(iv) to such Recipient's employees, Affiliates, contractors (including clinical researchers and CMO's), licensees, sublicensees, agents, consultants and potential business partners, as such Recipient reasonably determines is necessary to receive the benefit of the licenses and rights granted or available to it under this Agreement or to fulfill its obligations pursuant to this Agreement; provided, however, any such persons must be obligated to substantially the same extent as set forth in Section 8.1 to hold in confidence and not make use of such Confidential Information for any purpose other than those permitted by this Agreement and breach by such persons of their confidentiality obligations shall be deemed a breach by the Recipient of its confidentiality obligations hereunder. For the avoidance of doubt, it is understood and agreed that Camurus may not disclose any Confidential Information relating to the Product to any licensee of the FC Technology without the prior written consent of Rhythm except when exercising its rights under Sections 2.4 and 3.7.

(v) (a) to its actual or potential investment bankers; (b) to existing and potential investors in connection with an offering or placement of securities for purposes of obtaining financing for its business and to actual and prospective lenders for the purpose of obtaining financing for its business and to potential licensees or sublicensees of the FC Technology or any other rights licensed to the Recipient pursuant to this Agreement; and (c) to a bona fide potential acquirer or merger partner for the purposes of evaluating entering into a merger or acquisition, provided, however, any such persons must be obligated to substantially the same extent as set forth in Section 8.1 to hold in confidence and not make use of such Confidential Information for any purpose other than those permitted by this Agreement; and



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(vi) disclose Confidential Information to its legal advisers for the purpose of seeking advice.

8.4 Nothing in this Section 8 restricts either Party from using or disclosing any of its own Confidential Information for any purpose whatsoever; provided that, to the extent Know-How is exclusively licensed by one Party to the other, the licensor may not continue to use and disclose such Know-How in a manner not consistent with the exclusivity of the license granted.

8.5 Other than the press release pertaining to this transaction that the Parties have agreed upon and attached as Exhibit 8.5 to this Agreement and save as permitted in Section 8.3:

(i) neither Party, as a Recipient, shall make any public announcement or statement to the public containing Confidential Information of the Disclosing Party without the prior written consent of the Disclosing Party. No such public announcements or statements shall be made without the prior review and consent of the appropriate individual designated for the purpose by the other Party; and

(ii) save as may otherwise be provided herein neither Party shall mention or otherwise use the name or Trademark of the other Party or its Affiliates in any publication, press release, promotional material or other form of publicity without the prior written consent of the appropriate individual designated for the purpose by the other Party.

8.6 With respect to public disclosure required to be made pursuant to regulatory requirements or stock exchange rules applicable to a Party, each such Party will use reasonable efforts to submit to the other Party a draft of any public announcement ("Proposed Disclosure") directly related to the Product at least three (3) business days prior to the date on which such Party plans to make such announcement, and in any event will submit such draft to the other Party at least twenty-four (24) hours prior to the release of such Proposed Disclosure. If a Party is unable to comply with the foregoing twenty-four (24)-hour notice requirement because of a legal obligation or stock or securities exchange requirement to make more rapid disclosure, such Party will not be in breach of this Agreement but will in that case give telephone and email notice to a senior executive of the other Party and provide a draft of the Proposed Disclosure with as much notice as possible prior to the release of such announcement. A Party that receives a draft of any Proposed Disclosure that the other Party is planning to make may not make any disclosure or public announcement of the substance or content of such Proposed Disclosure until such time as such other Party has released such Proposed Disclosure to the public. Any draft of any Proposed Disclosure provided by one Party to the other pursuant to this Section 8.6 shall be deemed and treated as Confidential Information of the Party that is proposing to make such Proposed Disclosure.

8.7 Notwithstanding the foregoing Camurus shall be entitled to include the name of Rhythm within a list of collaborators.



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**9 REPRESENTATIONS AND WARRANTIES**

9.1 Mutual Representations and Warranties of Camurus and Rhythm.

Each of Camurus and Rhythm hereby represents and warrants to the other Party as of the Effective Date as follows

(a) It is duly organized, validly existing and in good standing under the laws of the jurisdiction of incorporation. It has the requisite legal and company power and authority to conduct its business as presently being conducted and as proposed to be conducted by it and is duly qualified to do business in those jurisdictions where its ownership of property or the conduct of its business requires

(b) It has all requisite legal and company power and authority to enter into this Agreement and to grant the rights described herein. All company actions on its part, its boards of directors or managers, or similar governing body and its equity holders necessary for (i) the authorization, execution, delivery and performance by it of this Agreement, and (ii) the consummation of the transactions contemplated hereby, have been duly taken.

(c) This Agreement is a legally valid and binding obligation of it, enforceable against it in accordance with its terms (except in all cases as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium, or similar laws affecting the enforcement of creditors' rights generally and except that the availability of the equitable remedy of specific performance or injunctive relief is subject to the discretion of the court or other tribunal before which any proceeding may be brought).

(d) Each Party has and shall continue to have written contracts with all Third Parties (including employees and subcontractors) performing services on its behalf under this Agreement where such services are intended to create inventions that may be Collaboration Inventions that assign to such Party all Collaboration Inventions and rights therein.

9.2 Additional Representations and Warranties of Camurus.

Camurus hereby further represents and warrants to Rhythm as of the Effective Date that:

(a) Save with respect to [ ]* that have been disclosed in writing by Camurus to Rhythm prior to the Effective Date, Camurus is not aware of any pending actions, suits or other proceedings against it or any of its Affiliates that questions the validity of any issued Camurus Platform Patents, or that otherwise relate or pertain to, any Camurus Platform IP;

(b) Camurus is not aware that any of the Camurus Platform Patents are invalid, and Camurus is not aware of any defect in Camurus' right, title and interest in and to the Camurus Platform Patents;



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(c) To the extent necessary to grant Rhythm the rights provided for in this Agreement, Camurus owns or Controls sufficient rights in the Camurus Platform IP.

(d) Camurus, to its knowledge and belief, has supplied Rhythm with all material documentation and information, possessed by Camurus or any of its Affiliates which have been requested by Rhythm [ ]*, during the course of due diligence prior to execution of this Agreement.

(e) Camurus is not aware of any use, infringement or misappropriation of the Camurus Platform IP in derogation of the rights granted to Rhythm in this Agreement. To the knowledge of Camurus, the practice and use of the Camurus Platform IP by Rhythm, its Affiliates or Sublicensees in the manner permitted or contemplated in this Agreement will not infringe upon, or constitute misappropriation or unauthorized use of, the Intellectual Property of any Third Party.

(f) To the knowledge of Camurus, Camurus and its Affiliates have complied with all the requirements of all United States and foreign patent offices with respect to the filing of applications for Patent Rights in respect of the Camurus Platform Patents, including the duty of disclosure under 37 C.F.R. 1.56 and comparable provisions of foreign patent offices.

(g) (i) To the knowledge of Camurus, Camurus and its Affiliates have complied with all the requirements of all United States and foreign patent offices to maintain the Camurus Platform Patents in full force and effect and (ii) to Camurus' knowledge, all necessary registration, maintenance and renewal fees have been paid and all necessary documents and certificates required to be filed in connection with the issued Camurus Platform Patents and pending applications for Patent Rights in respect of Camurus Platform Patents have been duly filed and the duty of disclosure under applicable patent laws have been fulfilled.

(h) In each case in which Camurus or any of its Affiliates has acquired title to any inventions forming part of Camurus Platform Patents from any person, Camurus or any such Affiliate, as applicable, has obtained an assignment in form sufficient to transfer all rights in such inventions.

(i) Exhibit 1.5 hereto lists all Patent Rights owned or Controlled by Camurus or any of its Affiliates on the Effective Date that cover the FC Technology. Except for the Patent Rights listed on Exhibit 1.5 hereto, neither Camurus nor any of its Affiliates owns or Controls any Patent Rights on the Effective Date pertaining to the FC Technology.

(j) [ ]*.

Notwithstanding anything to the contrary in this Agreement, a Party shall not be entitled to make any claims or bring any action against the other Party based on warranties or representations extended under this Agreement to the extent that the circumstances giving rise to such claim or action were known by or disclosed to the



claiming Party prior to the Effective Date or could reasonably have been inferred from information disclosed by the other Party.

9.3 Disclaimer of Warranties.

EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN SECTION 9.1 AND SECTION 9.2 OF THIS AGREEMENT OR MANDATED BY APPLICABLE LAW (WITHOUT THE RIGHT TO WAIVE OR DISCLAIM), NEITHER PARTY MAKES ANY REPRESENTATION OR WARRANTY WITH RESPECT TO THE LICENSED COMPOUNDS, PRODUCTS, ANY TECHNOLOGY, GOODS, SERVICES, RIGHTS, OR OTHER SUBJECT MATTER OF THIS AGREEMENT AND HEREBY DISCLAIMS ALL WARRANTIES, CONDITIONS OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF PERFORMANCE, MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS

**10 INDEMNIFICATION**

10.1 Indemnification by Rhythm. Subject to Sections 10. 3, 10.4 and 10.5, Rhythm shall indemnify, defend and hold harmless Camurus, its Affiliates, and its and their respective, directors, officers, employees and agents (collectively, the **"Camurus Indemnified Party"**) against any and all claims, liabilities, losses, damages, costs or expenses, including reasonable attorneys' fees, arising out of any claim or action brought by a Third Party (collectively, **"Losses"**) incurred or suffered by the Camurus Indemnified Party to the extent arising out of or caused by:

(i) the development, use, manufacture distribution, marketing, promotion or sale of Product by or on behalf of Rhythm or its Affiliates or Sublicensees in the Territory (including without limitation any claims based upon product liability and any claims arising from Camurus or its Affiliates provision of services under the Agreement); or

(ii) the breach by Rhythm of one or more of its representations, warranties or other obligations under this Agreement;

provided, however, that Rhythm shall not be required to indemnify, hold harmless or defend any Camurus Indemnified Party against any claim brought pursuant to Section 10.2(i) or (ii) to the extent that Camurus has an obligation to indemnify the Rhythm Indemnified Parties under Section 10.2 (i) or (ii).

10.2 Indemnification by Camurus. Subject to Sections 10.3, 10.4 and 10.5, Camurus shall indemnify, defend and hold harmless Rhythm, its Affiliates, and its and their respective, directors, officers, employees and agents (collectively, the **"Rhythm Indemnified Party"**) against any and all Losses (as defined above) incurred or suffered by the Rhythm Indemnified Party to the extent arising out of or caused by

(i) the practice or use by Camurus or its Affiliates, licensees or sublicensees of the Rhythm Collaboration IP or the Joint IP; or

(ii) the breach by Camurus of one or more of its representations, warranties or other obligations under this Agreement;

provided, however, that Camurus shall not be required to indemnify, hold harmless or defend any Rhythm Indemnified Party against any claim brought pursuant to Section 10.1(i) or (ii) to the extent that Rhythm has an obligation to indemnify the Camurus Indemnified Parties under Sections 10.1(i) or (ii).

10.3 Notification of Liabilities/Losses. In the event that either Party intends to seek indemnification for any claim under any of Sections 10.1 or 10.2, it shall inform the other Party of the claim promptly after receiving notice of the claim.

(i) In the case of a claim for which Camurus seeks indemnification under Section 10.1, Camurus shall permit Rhythm to direct and control the defence of the claim and shall provide such reasonable assistance as is reasonably requested by Rhythm (at Rhythm's cost) in the defence of the claim; provided that nothing in this Section 10.3 shall permit Rhythm to make any admission on behalf of Camurus, or to settle any claim or litigation which would impose any financial obligations on Camurus without the prior written consent of Camurus, such consent not to be unreasonably withheld or delayed.

(ii) In the case of a claim for which Rhythm seeks indemnification under Section 10.2, Rhythm shall permit Camurus to direct and control the defence of the claim and shall provide such reasonable assistance as is reasonably requested by Camurus (at Camurus' cost) in the defence of the claim, provided always that nothing in this Clause 10.3 shall permit Camurus to make any admission on behalf of Rhythm, or to settle any claim or litigation which would impose any financial obligations on Rhythm without the prior written consent of Rhythm, such consent not to be unreasonably withheld or delayed.

10.4 Right to Participate in Defense. Without limiting Section 10.3, any indemnitee will be entitled to participate in, but not control, the defense of a Third Party claim for which it has sought indemnification hereunder and to employ counsel of its choice for such purpose; provided, however, that such employment will be at the indemnitee's own expense unless (a) the employment and reimbursement thereof has been specifically authorized by the indemnifying Party in writing, or (b) the indemnifying Party has failed to assume the defense and employ counsel in accordance with section 10.3 (in which case the indemnified Party will control the defense).

10.5 Cooperation. If the indemnifying Party chooses to defend or prosecute any Third Party claim, the indemnified Party will, and will cause each other indemnitee to, cooperate in the defense or prosecution thereof and will 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 with such Third Party claim. Such cooperation will include access during normal business hours afforded to the indemnifying Party to, and reasonable retention by the indemnified Party of, records and information that are reasonably relevant to such Third Party claim, and making indemnities and other employees and agents available on a mutually convenient basis to provide additional





information and explanation of any material provided hereunder, and the indemnifying Party will reimburse the indemnified Party for all of its reasonable out-of-pocket expenses incurred in connection with such cooperation.

10.6 **Reserved**.

10.7 Exclusive Remedy. Each Party agrees that its sole and exclusive remedy with respect to Losses shall be pursuant to the indemnification provisions of this Section 10.

10.8 Insurance. Immediately upon the first administration of a Product to a human in the Territory by Rhythm, its Affiliates or its permitted Sublicensees, and for a period of [ ]* years after the expiration of this Agreement or the earlier termination thereof, Rhythm shall maintain Commercial General Liability Insurance and Product Liability Insurance, including contractual liability coverage, in an amount not less than [ ]* per occurrence bodily injury/property damage combined and [ ]* aggregate annually. Upon written request, the insuring Party shall provide the other Party with a certificate of insurance attesting to such coverage. It is understood and agreed that this insurance shall not be construed to limit either Party's liability with respect to its indemnification obligations hereunder.

## 11 TERM AND TERMINATION

11.1 Term of Agreement.

This Agreement shall become effective as of the Effective Date and, unless earlier terminated pursuant to other provisions of this Section 11, shall continue in full force and effect until the expiration of all Royalty Terms (the "**Term**"). On a country-by-country and Product-by-Product basis, after expiration of the Royalty Term for the Product in each country in the Territory, Rhythm shall have a royalty-free, non-exclusive license to develop, make, have made, use, import, market, promote, distribute, sell, and offer for sale and otherwise exploit such Product in such country.

11.2 Rhythm may terminate this Agreement without cause on a Product-by-Product basis or in its entirety at any time by giving not less than three (3) months prior written notice. Rhythm may terminate this Agreement on a Product-by-Product basis or in its entirety immediately following the withdrawal of Product from any market as a result of bona fide concerns based on specific and verifiable information that the applicable Product is unsafe for administration to humans (a **"Valid Safety Issue"**). For the avoidance of doubt, the ninety (90) day notice period applicable to termination under the first sentence of this Section 11.2 shall not apply in the case of termination for a Valid Safety Issue.

11.3 Termination for Material Breach or Bankruptcy.

(a) Upon the material breach by one Party under this Agreement, the other Party shall notify the breaching Party of such breach, and require that the breaching Party cure such breach within sixty (60) days (or, in the case of payment defaults, within thirty (30) days).



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(b) In the event that a material breach by Rhythm is not cured within the applicable cure period and without limiting other available remedies, Camurus shall have the right to terminate this Agreement upon written notice within thirty (30) days thereafter and all licenses granted by Camurus to Rhythm hereunder shall terminate, subject to the terms of Section 11.4.

(c) In the event that a material breach by Camurus is not cured within the applicable cure period and without limiting other available remedies, Rhythm shall have the right to terminate this Agreement upon written notice within thirty (30) days thereafter, and, at Rhythm' option, all licenses granted by Camurus to Rhythm hereunder shall continue in full force and effect, subject to the continuing obligation to pay milestone payments, license fees, Royalties and sales milestones. Upon such termination by Rhythm for such Camurus material breach, (i) Camurus' obligations hereunder to provide Know-How and other materials and information to enable the use of such licenses shall continue; (ii) Camurus' right to use any Rhythm Development Data and Regulatory Approvals shall terminate, except in respect of rights which were previously granted by Camurus to a licensee in the Territory prior to date of such termination, and (iii) the following provisions shall also continue: Sections 2.1, 2.2, 2.3, 3.1, 3.5, 3.6, 3.8, 4, 5 and 7. Termination of this Agreement pursuant to this Section 11.3(c) will be without prejudice to any rights that will have accrued to the benefit of a Party prior to the effective date of such termination. Such termination will not relieve a Party from obligations that are expressly indicated to survive the termination of this Agreement.

(d) Either Party may, without limiting other available remedies, terminate this Agreement, in whole by notice to the other Party in the event (i) the other Party shall have become bankrupt or shall have made an assignment for the benefit of its creditors; (ii) there shall have been appointed a trustee or receiver for the other Party or for all or a substantial part of its property; or (iii) any case or proceeding shall have been commenced or other action taken by or against the other Party in bankruptcy or seeking reorganization, liquidation, dissolution, winding-up, arrangement, composition or readjustment of its debts or any other relief under any bankruptcy, insolvency, reorganization or other similar act or law of any jurisdiction now or hereafter in effect, and any such event shall have continued for ninety (90) days undisputed, undismissed, unbonded and/or undischarged.

(e) Rhythm may also terminate this Agreement in accordance with the provisions of Sections 3.6 and 5.2, and if Rhythm fails to deliver notice of termination or continuation to Camurus in accordance with the time periods specified in Sections 3.6 and 5.2 then Camurus may terminate this Agreement with immediate effect by giving written notice to Rhythm.

(f) The Parties may terminate this Agreement, at any time upon mutual written agreement of the Parties.

11.4 Effect of Termination. Upon termination of this Agreement by either Party for any reason (other than termination by Rhythm pursuant to Section 11.3(c) or termination pursuant to Section 11.3(d)):



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(a) Subject to Section 11.4(e) below, all licenses granted by Camurus to Rhythm shall terminate (including all rights to use any Camurus Platform IP);

(b) all licenses and other rights granted Camurus to use any of the Rhythm Collaboration IP, Rhythm Development Data, Regulatory Approvals in the Territory shall continue, subject to all indemnity and other obligations of Camurus hereunder in respect thereof;

(c) Rhythm shall discontinue Prosecution and abandon any Patent Rights claiming the Product.

(d) Termination of this Agreement for any reason will be without prejudice to any rights that will have accrued to the benefit of a Party prior to the effective date of such termination. Such termination will not relieve a Party from obligations that are expressly indicated to survive the termination of this Agreement.

(e) In the event this Agreement terminates for Rhythm's breach or bankruptcy, the license granted in Section 2.1 shall remain in force only to the extent required for each of Rhythm's Sublicensees at such time to continue to exercise its sublicensed rights provided, that, upon Camurus' written request, such Sublicensee agrees in writing with Camurus (within 30 days after such written request by Camurus) that Camurus is entitled to enforce all relevant obligations under the provisions of this Agreement directly against such Sublicensee and provided further, that Rhythm shall be jointly liable with such Sublicensee to Camurus for any action or inaction of the Sublicensees under this Agreement.

(f) In case of termination without cause, neither party shall be liable to the other party for any compensation or damages by reason of such termination of this Agreement.

11.5 Termination for Patent Challenge. In the event that Rhythm or any of its Affiliates or Sublicensees commences or otherwise pursues, directly or indirectly (or voluntarily assists Third Parties to do so, other than as required by law or legal process), any proceeding seeking to have any of the Patent Rights forming part of Camurus Platform IP revoked or declared invalid, unpatentable, or unenforceable, Camurus may declare a material

breach hereunder that, if not cured within the thirty (30) days after Camurus gives written notice of such material breach to Rhythm and the applicable Affiliate or Sublicensee, shall give Camurus the right to terminate this Agreement with immediate effect .

11.6 Surviving Provisions. Except as otherwise provided in Section 11.3(c) and Section 11.4 above, in addition to the Sections that are expressly stated to survive termination, the following Sections of this Agreement shall survive any expiration or termination of this Agreement for any reason: Sections 1, 7.3(c), 7.3(e), 8, 9.3, 10, 11.4, 11.6 and 12.



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**12 MISCELLANEOUS PROVISIONS**

12.1 Consequential Damages. IN NO EVENT SHALL EITHER PARTY OR THEIR AFFILIATES BE LIABLE FOR SPECIAL, PUNITIVE, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES AS WELL AS LOST PROFITS, WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY AND IRRESPECTIVE OF WHETHER SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF ANY SUCH LOSS OR DAMAGE; *PROVIDED*, THAT THIS LIMITATION SHALL NOT LIMIT THE INDEMNIFICATION OBLIGATION OF SUCH PARTY UNDER THE PROVISIONS OF SECTION 10 FOR SUCH DAMAGES CLAIMED BY A THIRD PARTY AND NOTHING IN THIS SECTION 12.1 IS INTENDED TO LIMIT RHYTHM'S PAYMENT OBLIGATIONS UNDER SECTION 5 OR EITHER PARTY'S OBLIGATIONS UNDER SECTION 7 OR SECTION 8.

12.2 Assignment. Neither Party shall have the right to assign this Agreement, nor any of its rights hereunder, nor delegate any of its obligations hereunder, without the prior written consent of the other Party, which shall not be unreasonably withheld or delayed. Notwithstanding the foregoing, (i) Camurus and Rhythm may assign this Agreement to any purchaser of all or substantially all of its assets or to any successor entity resulting from any merger or consolidation of Camurus or Rhythm with or into such entity, or (ii) Camurus and Rhythm may assign this Agreement to any of its Affiliates but only for as long as such Affiliate remains an Affiliate of the assigning Party provided that such Affiliate agrees to be bound hereunder. Any attempt to assign this Agreement in breach of the foregoing shall be void. This Agreement shall be binding upon and inure to the benefit of the Parties hereto and each of their successors and permitted assigns.

12.3 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 this Agreement.

12.4 Compliance with Laws. Each Party shall review in good faith and cooperate in taking actions to ensure compliance of this Agreement and the Parties' activities hereunder with all applicable laws, rules, ordinances, regulations and guidelines. Each Party shall provide the other Party such reasonable assistance as may be required for the Party requesting such assistance to comply with all such laws, rules, ordinances, regulations and guidelines of all governmental entities, bureaus, and agencies having jurisdiction pertaining to this Agreement, including obtaining all import, export and other permits, certificates, licenses or the like required by such laws, rules, ordinances, regulations and guidelines necessary to permit the Parties to perform hereunder and to exercise their respective rights hereunder.

12.5 Force Majeure. Neither Party shall be responsible or liable in any way for failure or delay in carrying out the terms of this Agreement (other than any payment or confidentiality obligations) resulting from fire, flood, other natural disasters, war, labor difficulties, interruption of transit, accident, explosion, civil commotion, and acts of any governmental authority; *provided*, that the Party so affected shall give prompt notice thereof to the other. If any such cause prevents either Party from performing any of its material obligations hereunder for more than ninety (90) days,



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the other Party may then terminate this Agreement upon thirty (30) days prior notice. Except as provided in the preceding sentence, no such failure or delay shall terminate this Agreement, and each Party shall complete its obligations hereunder as promptly as reasonably practicable following cessation of the cause or circumstances of such failure or delay

12.6 Notices. All notices and other communications hereunder shall be in writing and shall be deemed given when delivered personally or by facsimile transmission (receipt verified), five (5) days after mailed by registered or certified air mail (return receipt requested), postage prepaid, or two (2) days after sent by express courier service, to the Parties at the following addresses (or at such other address for a Party as shall be specified by like notice; *provided*, that notices of a change of address shall be effective only upon receipt thereof):

If to Camurus, addressed to:

Camurus AB
att: CEO
Ideon Science Park
Sölvegatan 41
SE_223 70 Lund
Sweden
Phone: +46 46286 5730
Fax: +46 46 286 5739

If to Rhythm, addressed to:

Rhythm Pharmaceuticals, Inc.
855 Boylston Street, 11th Floor
Boston, MA 02116 USA
Attn: Chief Executive Officer
Phone: 857 264 4280
Fax: 857 264 4299

12.7 Amendment. No amendment, modification or supplement of any provision of this Agreement shall be valid or effective unless made in a writing that explicitly refers to this Agreement and that is signed by a duly authorized officer of each Party.

12.8 Waiver. Except to the extent otherwise expressly set forth in this Agreement, the rights and remedies of the Parties set forth herein or otherwise available at law or equity are cumulative and not alternative. No provision of this Agreement shall be waived by any act, omission or knowledge of any Party or its agents or employees except by an instrument in writing expressly waiving such provision and signed by a duly authorized officer of the waiving Party.

12.9 Counterparts. This Agreement shall be executed in two or more counterparts, each of which shall contain the signature of the Parties and all such counterparts shall



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constitute one and the same agreement. Counterparts may be delivered via facsimile, electronic mail (including pdf) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

12.10 Descriptive Headings. The descriptive headings of this Agreement are for convenience only, and shall be of no force or effect in construing or interpreting any of the provisions of this Agreement.

12.11 Severability. Whenever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be prohibited by or invalid under applicable law, such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of this Agreement and the Parties shall in good faith seek to agree on an alternative provision reflecting the intent of the Parties that is enforceable.

12.12 Entire Agreement. This Agreement shall constitute and contain the complete, final and exclusive understanding and agreement of the Parties and cancels and supersedes any and all prior negotiations, correspondence, understandings and agreements, whether oral or written, between the Parties with respect to the subject matter hereof. The Confidentiality Agreement previously entered into between the Parties shall terminate as of the Effective Date and the Parties rights and obligations in respect of the Confidential Information disclosed under the Confidentiality Agreement shall thereafter be governed by this Agreement.

12.13 Governing Law. Except to the extent otherwise expressly provided elsewhere in this Agreement, this Agreement and all disputes arising out of it (including non-contractual disputes) shall be governed by and interpreted in accordance with the substantive laws of England, without regard to the choice of law provisions thereof. The United Nations Convention on Contracts for the International Sale of Goods shall not apply to the transactions contemplated by this Agreement.

12.14 Dispute Resolution.

(a) The Parties recognize that a bona fide dispute as to certain matters may from time to time arise during the Term of this Agreement that relate to any Party's rights or obligations hereunder. In the event of the occurrence of any dispute arising out of or relating to this Agreement, including any question regarding its existence, validity or termination, either Party may, by written notice to the other, have such dispute referred to its respective officer designated below or their successors, for attempted resolution by good faith negotiations within sixty (60) days after such notice is received. If either Party desires to pursue arbitration under paragraph (b) below to resolve any such dispute, a referral to such executives under this paragraph (a) shall be a mandatory condition precedent. Said designated officers are as follows.

For Camurus: Chief Executive Officer

For Rhythm: Chief Executive Officer



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(b) In the event that they shall be unable to resolve the dispute by executive mediation within such sixty (60) day period and do not mutually agree to extend the time for negotiation, then subject to Section 3.4 and Section 7.2(b), the dispute shall be submitted to and finally settled by binding arbitration in accordance with the procedure set forth in Sections 12.14(c)-(d).

(c) Except with respect to actions by either Party seeking equitable or declaratory relief as described in Section 12.14(e), any claim or controversy arising in whole or in part under or in connection with this Agreement or the subject matter hereof that is not resolved pursuant to Section 12.14(b) or Section 3.4 or Section 7.2, as applicable, will be referred to and finally resolved by arbitration in accordance with the Rules of the International Chamber of Commerce (the "Rules") as such Rules may be modified by this Agreement, by one arbitrator, who will be agreed upon by the Parties. If the Parties are unable to agree upon a single arbitrator within thirty (30) days following the date arbitration is demanded, three arbitrators will be used, one selected by each Party within ten (10) days after the conclusion of the 30-day period and a third selected by the first two within ten (10) days thereafter. The arbitrator(s) will resolve any discovery disputes. Either Party may commence arbitration proceedings by notice to the other Party. The Arbitration Institute of International Chamber of Commerce shall administer any arbitration proceeding. The place of arbitration shall be London, England. The arbitration shall be conducted in English. The award of arbitration shall be final and binding upon both Parties.

(d) Except to the extent otherwise expressly provided in this Agreement, the arbitrator(s) will apply the laws of England. Judgment on the award granted in any arbitration hereunder may be entered in any court having jurisdiction over the award or any of the Parties or any of their respective assets. The Parties knowingly and voluntarily waive their rights to have their dispute tried and adjudicated by a judge and jury except as expressly provided herein.

(e) Nothing in this Section 12.14 will prevent a Party from resorting to judicial proceedings if: (i) interim relief from a court is necessary to prevent serious and irreparable injury to such Party; or (ii) litigation is required to be filed prior to the running of the applicable statute of limitations. The use of any alternative dispute resolution procedure will not be construed under the doctrine of latches, waiver or estoppel to affect adversely the rights of either Party. Despite such action the Parties shall continue to participate in good faith in the procedures specified in this Section 12.14.

12.15 Independent Contractors. Nothing herein shall be construed to create any relationship of employer and employee, agent and principal, partnership or joint venture between the Parties. Each Party is an independent contractor. Neither Party shall have authority to make any statements, representations, or commitments of any kind, or to take any action which shall be binding on the other Party, except as may be explicitly provided for herein or otherwise authorized in writing.



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This Agreement has been executed in two (2) original copies of which the (Parties) have taken one (1) each. The Agreement shall come into force on the date given at the beginning of this Agreement.

For and on behalf of Camurus AB

Date: January 4, 2016

Signed by: /s/ Fredrik Tiberg

Full name: Fredrik Tiberg

Position: President & CEO

For and on behalf of Rhythm Pharmaceuticals, Inc.

Date: January 4, 2016

Signed by : /s/ Bart Henderson

Full name: Bart Henderson

Position: President

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**EXHIBIT 1.5**
**CAMURUS PLATFORM IP PATENT RIGHTS**

| Short title (ref no.) | Filed in (main jurisdictions) | Granted in | Patent # |
|---|---|---|---|
| [ ]* | | | |

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**EXHIBIT 1.7**
**CAMURUS TRADEMARKS**

| Trademarks | Country | Classes | Registration number |
|---|---|---|---|
| [ ]* | | | |

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**EXHIBIT 1.19**
**DEVELOPMENT PLAN**

See Attachment

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**EXHIBIT 7.2 (c)**
**EXPERT'S DETERMINATION**

1. Any matter or dispute to be determined by an expert under Section 7.2(c) of this Agreement (**"Expert"**) shall be referred to a person suitably qualified to determine that particular matter or dispute who shall be nominated jointly by the Parties or, failing agreement between the Parties within twenty (20) Business Days of a written request by either Party to the other seeking to initiate the Expert's decision procedure, either party may request the President for the time being of the Association of the British Pharmaceutical Industry or any successor body to it to nominate the Expert.

2. The Parties shall, within fourteen (14) days of the appointment of the Expert, meet with him/her in order to agree a program for oral and written submissions.

3. In all cases the terms of appointment of the Expert by whomsoever appointed shall include:

3.1 a commitment by the Parties to share equally the Expert's fee;

3.2 a requirement on the Expert to act fairly as between the Parties and according to the principles of natural justice;

3.3 intentionally omitted;

3.4 a commitment by the Parties to supply to the Expert the submissions the subject of paragraph 2 and all such assistance, documents and information as he/she may require for the purpose of his or her determination.

3.5 a commitment by the Parties that all negotiations connected with the dispute shall be conducted in confidence and without prejudice to the rights of the parties in any future proceedings.

4. The Expert shall, within forty-five (45) days of his/her appointment, give a written decision which shall contain a factual analysis, his/her conclusions and the reasons for his/her conclusions.

5. The Expert's decision shall be final and binding on the Parties (save in the case of manifest error).

6. The Parties expressly acknowledge and agree that they do not intend the reference to the Expert to constitute an arbitration within the scope of any arbitration legislation, the Expert's decision is not a quasi judicial procedure and the Parties shall have no right of appeal against the Expert's decision except as provided in Paragraph 5.

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**EXHIBIT 8.5**
**PRESS RELEASE**

**13 Rhythm and Camurus Announce License Agreement for Extended Release FluidCrystal Setmelanotide**

*BOSTON and LUND, Sweden, January 5, 2016*— Rhythm and Camurus announced today a license agreement for the use of Camurus' drug delivery technology, FluidCrystal®, to formulate setmelanotide (RM-493), Rhythm's novel melanocortin-4 receptor (MC4R) agonist. Under the terms of the agreement, Camurus has granted Rhythm a worldwide license to the FluidCrystal technology to formulate setmelanotide and to develop, manufacture, and commercialize this new formulation that has the potential for once-weekly dosing, administered as a subcutaneous injection. Rhythm plans to initiate a Phase I clinical trial with the setmelanotide FluidCrystal formulation after completing GMP manufacturing.

"We have developed a setmelanotide formulation with Camurus with an impressive sustained-duration profile," said Bart Henderson, President of Rhythm. "We believe this new formulation will provide a significant benefit to patients, improving compliance and ease of use with once-weekly dosing."

"The partnership with Rhythm follows the formulation development and preclinical assessment of this compelling drug candidate based on our FluidCrystal Injection depot technology," said Fredrik Tiberg, President and CEO of Camurus. "Rhythm's setmelanotide represents a novel approach to treating patients suffering from life-threatening obesity due to these rare and serious genetic disorders."

The license granted to Rhythm is specific to the FluidCrystal technology incorporating setmelanotide. The formulation has been developed in a collaboration between the companies. Under the terms of the license agreement, Rhythm is responsible for manufacturing, development, and commercialization of the setmelanotide FluidCrystal formulation worldwide. Camurus is eligible to receive an upfront payment and progressive payments of approximately $65 million, of which the majority are sales milestones. In addition, Camurus is eligible to receive tiered, mid to mid-high, single digit royalties on future sales of the product.

**About Setmelanotide (RM-493)**

Setmelanotide is a potent, first-in-class MC4R agonist in development for the treatment of obesity caused by genetic deficiencies in the MC4 pathway, a key pathway in humans that regulates energy expenditure, homeostasis, and appetite. The critical role of the MC4 pathway in weight regulation was validated with the discovery that single genetic defects along this pathway result in early-onset and severe obesity. A Phase 2 setmelanotide trial is ongoing for the treatment of Prader-Willi syndrome (PWS), a rare genetic disorder that causes life-threatening obesity. Recent scientific evidence implicates defects in the MC4 pathway as the likely cause of the weight and appetite abnormalities in PWS. A second Phase 2 trial is ongoing for the treatment of pro-opiomelanocortin (POMC) deficiency obesity, a very rare, life-threatening genetic disorder of the MC4 pathway associated with unrelenting appetite and obesity.

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**About FluidCrystal Injection Depot**

The FluidCrystal Injection depot delivers therapeutic levels of drug substance over extended periods—tunable from days to months—from a single injection. While traditional depot therapeutics comprise complicated microsphere technology, Camurus' depot offers a liquid solution that transforms into a controlled release liquid crystal gel matrix in situ on contact with minute quantities of aqueous fluid at site of injection. The FluidCrystal delivery system overcomes traditional side effects associated with high initial drug release on injection (drug burst) and poor drug stability by effectively encapsulating the drug compound in the nanopores of the depot matrix throughout the entire process from injection until final degradation. This, together with the ready-to-use product design, makes the system highly suitable for sustained parenteral delivery of peptides and proteins. FluidCrystal is a registered trademark of Camurus AB.

**About Rhythm (www.rhythmtx.com)**

Rhythm is a biopharmaceutical company focused on developing peptide therapeutics for the treatment of rare genetic deficiencies that result in life-threatening metabolic disorders. Rhythm's lead peptide product candidate is setmelanotide, a first-in-class melanocortin 4 receptor (MC4R) agonist for the treatment of rare genetic disorders of obesity. The company is based in Boston, Massachusetts.

**About Camurus**

Camurus is a Swedish research-based pharmaceutical company committed to developing and commercializing innovative and differentiated medicines for the treatment of severe and chronic conditions. New drug products with best-in-class potential are conceived based on the proprietary FluidCrystal® drug delivery technologies and an extensive R&D expertise. Camurus' clinical pipeline includes products for treatment of cancer, endocrine diseases, pain, and addiction, developed in-house and in collaboration with international pharmaceutical companies. The company's share is listed on Nasdaq Stockholm under the ticker "CAMX." For more information, visit www.camurus.com.

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