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

Form 10-K

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2013

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number: 000-50865

MannKind Corporation

(Exact name of registrant as specified in its charter)

Delaware	**13-3607736**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*
28903 North Avenue Paine Valencia, California	**91355**
(Address of principal executive offices)	*(Zip Code)*

Registrant's telephone number, including area code
(661) 775-5300

Securities registered pursuant to Section 12(b) of the Act:

Title of Class	Name of Each Exchange on Which Registered
Common Stock, par value $0.01 per share	The NASDAQ Global Market

Securities registered pursuant to Section 12(g) of the Act:

None
(Title of Class)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☑ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☑ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☑

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 ☑ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐
(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

As of June 28, 2013, the aggregate market value of the voting stock held by non-affiliates of the registrant, computed by reference to the last sale price of such stock as of such date on the NASDAQ Global Market, was approximately $1,153,987,371.

As of February 17, 2014, there were 377,208,424 shares of the registrant's Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement, or the Proxy Statement, for the 2014 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Form 10-K, are incorporated by reference in Part III of this Annual Report on Form 10-K.

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MANNKIND CORPORATION

Annual Report on Form 10-K
For the Fiscal Year Ended December 31, 2013

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Forward-Looking Statements

Statements in this report that are not strictly historical in nature are forward-looking statements. These statements include, but are not limited to, statements about: the progress or success of our research, development and clinical programs, including the application for and receipt of regulatory clearances and approvals, our efforts to identify and enter into collaborations with pharmaceuticals companies for commercialization of AFREZZA and the timing or success of the commercialization of AFREZZA, if approved, or any other products or therapies that we may develop; our ability to market, commercialize and achieve market acceptance for AFREZZA, or any other products or therapies that we may develop; our ability to protect our intellectual property and operate our business without infringing upon the intellectual property rights of others; our estimates for future performance; our estimates regarding anticipated operating losses, future revenues, capital requirements and our needs for additional financing; and scientific studies and the conclusions we draw from them. In some cases, you can identify forward-looking statements by terms such as “anticipates,” “believes,” “could,” “estimates,” “expects,” “goal,” “intends,” “may,” “plans,” “potential,” “predicts,” “projects,” “should,” “will,” “would,” and similar expressions intended to identify forward-looking statements. These statements are only predictions or conclusions based on current information and expectations and involve a number of risks and uncertainties. The underlying information and expectations are likely to change over time. Actual events or results may differ materially from those projected in the forward-looking statements due to various factors, including, but not limited to, those set forth under the caption “Risk Factors” and elsewhere in this report. Except as required by law, we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

AFREZZA®, MedTone®, Dreamboat® and Technosphere® are our trademarks in the United States. We have also applied for or have registered company trademarks in other jurisdictions, including Europe and Japan. This document also contains trademarks and service marks of other companies that are the property of their respective owners.

PART I

Item 1. *Business*

Unless the context requires otherwise, the words “MannKind,” “we,” “company,” “us” and “our” refer to MannKind Corporation and its subsidiaries. Unless explicitly stated otherwise, AFREZZA refers to the combination of AFREZZA inhalation powder and the AFREZZA inhaler.

MannKind Corporation is a biopharmaceutical company focused on the discovery, development and commercialization of therapeutic products for diseases such as diabetes. In October 2013, we resubmitted a new drug application, or NDA, to the United States Food and Drug Administration, or FDA, seeking approval of our lead product candidate, AFREZZA (insulin human [rDNA origin]) inhalation powder. AFREZZA is an ultra rapid-acting insulin that is intended to improve glycemic control in adults with type 1 or type 2 diabetes. Diabetes is a significant health concern. According to the Centers for Disease Control and Prevention, in the United States in 2011, approximately 25.8 million people had diabetes and if current trends continue, one in three adults in the United States is expected to have diabetes by 2050. Globally, the International Diabetes Federation has estimated that approximately 382.0 million people had diabetes in 2013 and approximately 592.0 million people will have diabetes by 2035.

AFREZZA

AFREZZA is absorbed into the bloodstream more quickly than subcutaneously injected rapid acting insulin analogs and regular human insulin. The time to maximum plasma insulin concentration is 12-15 minutes after administration of AFREZZA compared to 45-90 minutes for rapid acting insulin analogs and 90-150 minutes for regular human insulin. The time action profile of AFREZZA mimics the early phase insulin response observed in healthy normal individuals after a meal, which is characteristically absent in patients with type 2 diabetes.

The AFREZZA inhalation powder is made using a pH-sensitive organic molecule that self-assembles into small particles under acidic conditions. We refer to these particles as Technosphere particles. Certain drugs, such as insulin, can be loaded onto these particles by combining a solution of the drug with a suspension of Technosphere material, which is then dried to powder form. This powder is then filled into plastic cartridges and packaged. To administer AFREZZA inhalation powder, a patient loads a cartridge into our inhaler. By inhaling through this device, air is pulled through the cartridge, which aerosolizes the powder and pulls the particles into the air current and out through the mouthpiece. The individual particles within this aerosol are small and have aerodynamic properties that enable them to fly efficiently deep into the lungs. When the particles contact the moist lung surface with its neutral pH, the Technosphere particles dissolve immediately, releasing the insulin molecules to diffuse across a thin layer of cells into the bloodstream. We believe that the insulin absorption step is a passive process that occurs without any active assistance or enhancement and without disruption of either cell membranes or the tight junctions between cells.

Our early clinical studies utilized our first-generation inhaler, known as MedTone. As part of ongoing development activities, we developed a next generation, or Gen2 inhaler, also known as Dreamboat. Both the MedTone and the Gen2 devices are breath-powered, re-usable, high resistance inhalers that rely on air flow to empty the cartridge and deagglomerate the powder, but the Gen2 inhaler system incorporates cosmetic and technical improvements and removes non-essential elements. The resulting device is smaller and more efficient, can be operated in fewer steps, requires only one inhalation per cartridge, and needs no cleaning because it is replaced after 15 days of use. The same AFREZZA powder is used in both the MedTone and the Gen2 inhaler systems. However, due to the increased efficiency of the Gen2 inhaler, it requires one third less AFREZZA powder to achieve the same therapeutic effect.

In March 2009, we submitted an NDA for AFREZZA to the FDA, in which we sought approval of the product with the MedTone inhaler. In March 2010, we received a Complete Response letter from the FDA that requested additional information about the clinical utility of AFREZZA and about the commercial version of the MedTone inhaler. After meeting with the FDA in June 2010, we determined that the best way to address the agency's inhaler-related questions was to submit information regarding the bioequivalence of the MedTone inhaler and the Gen2 inhaler, the latter of which had by that time become our preferred device from a clinical and commercial perspective. In June 2010, we submitted to the FDA the available bioequivalency data for the two devices along with additional evidence of efficacy of AFREZZA as part of our response to the 2010 Complete Response letter.

In January 2011, we received a second Complete Response letter in which the FDA requested that we conduct two clinical studies with the Gen2 inhaler (one in patients with type 1 diabetes and one in patients with type 2 diabetes), with at least one trial including a treatment group using the MedTone inhaler in order to obtain a head-to-head comparison of the pulmonary safety data for the two devices.

After confirming the designs of the requested studies with the FDA, we conducted two Phase 3 clinical studies at sites in the United States, Eastern Europe and South America. In August 2013, we released the following results of these Phase 3 clinical studies, both of which met their primary efficacy endpoints and safety objectives.

Phase 3 Studies

Study 171

The first of these studies, Study 171, was an open-label study involving 518 patients with type 1 diabetes on basal/bolus insulin therapy. After a four-week run-in period to optimize their basal insulin, patients entered a 24-week treatment period in which they were randomized in one of three ways:

- Continuing on subcutaneous insulin aspart in combination with a basal insulin (170 patients);
- Switching to AFREZZA administered using the Gen2 inhaler in combination with their basal insulin (174 patients); or
- Switching to AFREZZA administered using the MedTone inhaler in combination with their basal insulin (174 patients).

The treatment period consisted of 12 weeks of prandial, or mealtime, insulin optimization with continued basal titration followed by a 12-week period during which subjects maintained stable doses of insulin (prandial and basal). There was also a follow-up visit four weeks after completion of the treatment period.

Over the 24-week treatment period of this study, glycosylated hemoglobin, or HbA1c, levels decreased comparably in the AFREZZA-Gen2 group (-0.21%) and the insulin aspart group (-0.40%). HbA1c levels are a measure of average blood glucose. The 95% confidence interval (0.02% to 0.36%) of the between-group difference did not exceed the predetermined threshold of 0.40%, thereby establishing non-inferiority between AFREZZA-Gen2 and insulin aspart, which was the primary endpoint of the study.

There was a significant difference in fasting blood glucose, or FBG, levels in the AFREZZA-Gen2 group compared to the insulin aspart group. In the AFREZZA-Gen2 group, mean FBG levels decreased by 25.3 mg/dL by the end of the treatment period whereas the insulin aspart group experienced an increase of 10.2 mg/dL in FBG levels over the same period (p=0.0027). After the four-week follow-up period, during which all patients received insulin aspart and a basal insulin, there was no longer any difference in FBG levels between the treatment groups, demonstrating that this effect on FBG levels was attributable to AFREZZA therapy.

Significantly less total hypoglycemia was observed in the AFREZZA-Gen2 group (9.80 events per subject-month) compared to the insulin aspart group (13.97 events per subject-month; p<0.0001). The event rate of severe hypoglycemia was also lower in the AFREZZA-Gen2 group (8.05 events per 100 subject-months) than in the insulin aspart group (14.45 events per 100 subject-months); however, this difference was not statistically significant (p=0.1022).

The proportion of subjects achieving A1c target levels ≤7.0% or ≤6.5% at the end of the 24-week treatment period was less in the AFREZZA-Gen2 group than in the insulin aspart group; however, among patients who achieved A1c levels ≤7.0% and ≤6.5% at the end of the 24-week treatment period, the event rates for overall hypoglycemia (mild, moderate and severe) were all significantly lower in the AFREZZA-Gen2 group than in the insulin aspart group.

There was also a significant difference in weight outcomes. Patients in the AFREZZA-Gen2 group lost an average of 0.39 kg over the treatment period compared to an average gain of 0.93 kg in the insulin aspart group (p=0.0102).

The main safety objective of this study was to compare changes in FEV1 (forced expiratory volume in one second) from randomization to week 24 between the AFREZZA-Gen2 and AFREZZA-MedTone groups. Over this period, there was an insignificant difference of 0.01 L in mean change in FEV1 between the two AFREZZA groups (p=0.5364). Over the same 24-week treatment period, the decrease in FEV1 seen in the AFREZZA-Gen2 group was slightly greater than that seen in the aspart group (0.03 L). After cessation of the treatment period, FEV1 values in both AFREZZA groups increased, so that by the follow-up visit at week 28 there were virtually no differences in FEV1 among the three treatment groups.

In general, treatment with AFREZZA was well tolerated over 24 weeks by subjects with type 1 diabetes. The incidence of serious adverse events related to study drug was similar in the AFREZZA-Gen2 (2.3%), AFREZZA-MedTone (2.9%) and insulin aspart (1.8%) groups. There were no serious cardiovascular events reported in this study. The most common drug-related adverse event was cough, reported by 30.5% of AFREZZA-Gen2 patients, 20.8% of AFREZZA-MedTone patients and 0% of insulin aspart patients. Cough was predominantly dry, intermittent, and usually occurred within 10 minutes of inhalation. The incidence of cough was highest during the first week of the treatment period and diminished quickly thereafter. The discontinuation rate due to cough was low (AFREZZA-Gen2: 5.7%; AFREZZA-MedTone: 2.9%; insulin aspart: 0%).

Study 175

Study 175 was a double-blind, placebo-controlled study involving 353 patients with type 2 diabetes whose disease was inadequately controlled on metformin with or without a second or third oral medication. After a six-week run-in period during which all patients received dietary counseling and initiated blood glucose monitoring

while continuing their oral medications, patients entered a 24-week treatment period in which they were randomized to one of two groups where, in addition to their oral medication, they received either:

- AFREZZA inhalation powder, administered using the Gen2 inhaler (177 patients); or
- Technosphere inhalation powder (placebo), administered using the Gen2 inhaler (176 patients).

The treatment period consisted of 12 weeks of prandial insulin titration followed by 12 weeks of relatively stable dosing. Subjects could not adjust or alter the doses of their oral medications during the study without discussion between the principal investigator and the medical monitor. There was also a safety follow-up visit four weeks after completion of the treatment period, during which all subjects returned to oral therapy only.

The primary endpoint of the study was the mean change in HbA1c levels from baseline to week 24 between the two groups. Over the 24-week treatment period, mean HbA1c levels decreased by 0.82% in the AFREZZA group compared to a decrease of 0.42% in the comparator oral-therapy group. The between-group difference in change in mean HbA1c levels was statistically significant ($p<0.0001$), thereby establishing the superiority of AFREZZA over the comparator oral-therapy treatment.

A significantly greater percentage of patients in the AFREZZA group reached specified HbA1c target levels than in the comparator oral-therapy group. After 24 weeks of treatment, 37.7% of patients in the AFREZZA group achieved A1c levels below 7.0% compared to only 19.0% of patients in the comparator oral-therapy group ($p=0.0005$), and 15.9% of patients in the AFREZZA group achieved A1c levels below 6.5% compared to only 4.2% of the patients receiving only oral therapy ($p=0.0021$).

During the treatment period, postprandial glucose excursions were reduced in the AFREZZA group compared to those in the comparator oral-therapy group. By week 24, mean blood glucose levels did not exceed 170.2 mg/dL postprandially in the AFREZZA group whereas mean blood glucose levels reached as high as 194.7 mg/dL postprandially in the comparator oral-therapy group.

Over the treatment period, mean fasting blood glucose levels decreased moderately in the AFREZZA group by 11.2 mg/dL compared to a decrease of 3.8 mg/dL in the comparator oral-therapy group. This difference was not statistically significant ($p=0.1698$).

Patients in the AFREZZA group gained an average of 0.49 kg over the treatment period compared to an average loss of 1.13 kg by patients in the comparator oral-therapy group ($p<0.0001$).

As expected, the incidence of mild and moderate hypoglycemia was higher in the AFREZZA group (67.2% of patients) compared to the comparator oral-therapy group (30.1% of patients; $p<0.0001$). However, there was not a significant difference in the incidence of severe hypoglycemia, which was reported in nine (5.1%) AFREZZA patients compared to three (1.7%) oral-therapy patients ($p=0.0943$).

In general, treatment with AFREZZA was well tolerated over 24 weeks by subjects with type 2 diabetes. The incidence of serious adverse events was lower in the AFREZZA group (2.8%) compared to the comparator oral-therapy group (5.1%). The incidence of serious cardiovascular events was low overall and balanced between the groups (AFREZZA: 2 events; oral therapy: 3 events). Similarly, the incidence of adverse events resulting in discontinuation was low overall and balanced between the treatment groups (AFREZZA: 4.0%; oral therapy: 5.1%). The most common adverse event was cough, occurring with comparable incidence in both the AFREZZA (23.7%) group and the oral therapy (19.9%) group (who were also taking a placebo powder). Cough was predominantly dry, intermittent, and usually occurred within 10 minutes of inhalation. The incidence of cough in both treatment groups was highest during the first week of the treatment period and diminished thereafter.

Since the release of these preliminary results, we have subjected the data from studies 171 and 175 to further analysis. Our intention is to present detailed results from both studies at a major scientific meeting in the first half of 2014 and to submit study reports for publication in peer-reviewed journals.

Regulatory Status

In October 2013, we submitted the full results of these studies to the FDA as an amendment to our AFREZZA NDA. The Endocrinologic and Metabolic Drugs Advisory Committee of the FDA is scheduled to discuss our NDA on April 1, 2014. The target date for the FDA to complete its review of the AFREZZA NDA is April 15, 2014. However, the data collected from these clinical studies may not be sufficient to support FDA approval. Moreover, there can be no assurance that we will satisfy all of the FDA's requirements for approval of AFREZZA. The FDA could also request that we conduct additional clinical studies in order to provide sufficient data for approval of AFREZZA.

Other Product Opportunities

AFREZZA utilizes our proprietary Technosphere formulation technology; however, this technology is not limited to insulin delivery. We believe it represents a versatile drug delivery platform that may allow pulmonary administration of certain drugs that currently require administration by injection. Beyond convenience, we believe the key advantage of drugs inhaled as Technosphere formulations is that they can be absorbed very rapidly into the arterial circulation, essentially mimicking intra-arterial administration. Currently, we are actively working with several parties to assess the feasibility of formulating different active ingredients on Technosphere particles. Additionally, our inhaler technology has the potential to be utilized for the administration of dry powder formulations for various other applications.

Prior to the receipt of the Complete Response letters relating to AFREZZA, we had additional development programs aimed at developing products for treating different forms of cancer, some of which have since been out-licensed. During 2013, we conducted a limited amount of research with respect to our remaining oncology programs. Given our current resource constraints, we do not expect to allocate any significant funds to oncology product development activities in the near future.

OUR STRATEGY

The following are key elements of our strategy:

Gain FDA approval of AFREZZA. We resubmitted the full results of our completed studies to the FDA as an amendment to our AFREZZA NDA in October 2013. The target date for the FDA to complete its review of the AFREZZA NDA is April 15, 2014.

Seek a development and commercialization partner for AFREZZA. We are pursuing potential collaboration opportunities with large pharmaceutical companies in the United States, Europe and elsewhere to provide the financial and operational resources to develop, commercialize, market and sell AFREZZA. We have not yet licensed or transferred any of our rights to this product or to our platform technology.

Capitalize on our proprietary Technosphere and inhaler technology for the delivery of active pharmaceutical ingredients. We are actively exploring opportunities to out-license our proprietary Technosphere formulation technology. We believe that Technosphere formulations of active pharmaceutical ingredients have the potential to demonstrate clinical advantages over existing therapeutic options in a variety of therapeutic areas. Additionally, our inhaler technology has the potential to be utilized for the administration of dry powder formulations for various other applications.

SALES AND MARKETING

Our efforts to date have been directed at developing pharmaceutical products for a number of different markets. We currently have no sales or distribution capabilities and have no experience as a company in marketing or selling pharmaceutical products. However, we have built a small marketing team and are engaged in the planning and market research activities that we believe would typically be undertaken to support the late-stage development of a pharmaceutical product.

In order to commercially market our product candidates, we would either need to develop an internal sales team and continue to expand our marketing infrastructure or collaborate with third parties who have greater sales

and marketing capabilities and have access to potentially large markets. To date, we have retained worldwide commercialization rights for all of our Technosphere-based product candidates, including AFREZZA. We intend to pursue potential collaboration opportunities to assist us in the commercialization of AFREZZA in the United States and other major markets.

To date, we have viewed our operations and managed our business as one segment operating in the United States.

MANUFACTURING AND SUPPLY

We formulate and fill the AFREZZA inhalation powder into plastic cartridges and blister package the cartridges in our Danbury, Connecticut facility. We believe that our Danbury facility has enough capacity to satisfy the initial commercial demand for AFREZZA, if approved, although the facility includes expansion space that can allow production capacity to be increased based on anticipated needs during the initial years of commercialization. The quality management systems of our facility were certified to be in conformance with the ISO 13485 and ISO 9001 standards. Our facility has been inspected twice by the FDA, once for a pre-approval inspection in the fall of 2009 and once for an annual inspection in May 2013. The FDA may conduct additional inspections of our facility.

Currently, our insulin inventory is from two sources. Between November 2007 and July 2011, we received a quantity of insulin pursuant to an insulin supply agreement with N.V. Organon, a subsidiary of Merck & Co., Inc., or the Supply Agreement. In June 2009, we acquired a quantity of bulk insulin from Pfizer Manufacturing Frankfurt GmbH, a subsidiary of Pfizer Inc., as well as Pfizer's rights under a license to manufacture insulin for pulmonary delivery. In addition, we acquired an option to purchase from Pfizer additional insulin inventory, in whole or in part, at a specified price, to the extent it remains available. Once we have used our existing supply of insulin, we will need to secure additional insulin from market sources.

The contract manufacturer that has been producing our clinical supplies of the Gen2 inhaler and the corresponding cartridges has performed qualification of the various cartridge and inhaler molds for commercial purposes. We may also seek to qualify an additional vendor.

Currently, we purchase the raw material from which we produce Technosphere particles from a major chemical manufacturer with facilities in Europe and North America. We also have the capability of manufacturing this chemical ourselves in our Danbury facility, which we intend to use as a back-up facility. Like us, our third-party manufacturers are subject to extensive governmental regulation. We rely on our manufacturers to comply with relevant regulatory requirements, including compliance with Quality System Regulations, or QSRs.

INTELLECTUAL PROPERTY AND PROPRIETARY TECHNOLOGY

Our success will depend in large measure on our ability to obtain and enforce our intellectual property rights, effectively maintain our trade secrets and avoid infringing the proprietary rights of third parties. Our policy is to file patent applications on what we deem to be important technological developments that might relate to our product candidates or methods of using our product candidates and to seek intellectual property protection in the United States, Europe, Japan and selected other jurisdictions for all significant inventions. We have obtained, are seeking, and will continue to seek patent protection on the compositions of matter, methods and devices flowing from our research and development efforts.

Our Technosphere drug delivery platform, including AFREZZA, enjoys patent protection relating to the particles, their manufacture, and their use for pulmonary delivery of drugs. We have additional patent coverage relating to the treatment of diabetes using AFREZZA. We have been granted patent coverage for our inhaler and cartridges in the form in which we expect our insulin product to be sold to the consumer, if and when approved by the FDA. We have additional pending patent applications, and expect to file further applications, relating to the drug delivery platform, methods of manufacture, the AFREZZA product and its use, and other Technosphere-based products, inhalers and inhaler cartridges. Overall, AFREZZA is protected by over 220 issued patents, and we also have over 300 pending applications in the United States and selected jurisdictions around the world that

may provide additional protection if and when they are allowed. These include composition and inhaler and cartridge patents providing protection for AFREZZA with various expiration dates, the longer-lived of which will not expire until between 2029 and 2032. In addition, we have certain method of treatment claims that have terms extending into 2026 and 2029.

The field of pulmonary drug delivery is crowded and a substantial number of patents have been issued in these fields. In addition, because patent positions can be highly uncertain and frequently involve complex legal and factual questions, the breadth of claims obtained in any application or the enforceability of issued patents cannot be confidently predicted. Further, there can be substantial delays in commercializing pharmaceutical products, which can partially consume the statutory period of exclusivity through patents.

In addition, the coverage claimed in a patent application can be significantly reduced before a patent is issued, either in the United States or abroad. Statutory differences in patentable subject matter may limit the protection we can obtain on some of our inventions outside of the United States. For example, methods of treating humans are not patentable in many countries outside of the United States. These and other issues may limit the patent protection we are able to secure internationally. Consequently, we do not know whether any of our pending or future patent applications will result in the issuance of patents or, to the extent patents have been issued or will be issued, whether these patents will be subjected to further proceedings limiting their scope, will provide significant proprietary protection or competitive advantage, or will be circumvented or invalidated. Furthermore, patents already issued to us or our pending applications may become subject to disputes that could be resolved against us. In addition, in certain countries, including the United States, applications are generally published 18 months after the application's priority date. In any event, because publication of discoveries in scientific or patent literature often trails behind actual discoveries, we cannot be certain that we were the first inventor of the subject matter covered by our pending patent applications or that we were the first to file patent applications on such inventions.

Although we own a number of domestic and foreign patents and patent applications relating to our Technosphere-based investigational products, we have identified certain third-party patents having claims relating to pulmonary insulin delivery that may trigger an allegation of infringement upon the commercial manufacture and sale of AFREZZA. We believe that we are not infringing any valid claims of any patent owned by a third party. However, if a court were to determine that our inhaled insulin product was infringing any of these patent rights, we would have to establish with the court that these patents were invalid in order to avoid legal liability for infringement of these patents. Proving patent invalidity can be difficult because issued patents are presumed valid. Therefore, in the event that we are unable to prevail in an infringement or invalidity action we will either have to acquire the third-party patents outright or seek a royalty-bearing license. Royalty-bearing licenses effectively increase costs and therefore may materially affect product profitability. Furthermore, if the patent holder refuses to either assign or license us the infringed patents, it may be necessary to cease manufacturing the product entirely and/or design around the patents. In either event, our business would be harmed and our profitability could be materially adversely impacted. If third parties file patent applications, or are issued patents claiming technology also claimed by us in pending applications, we may be required to participate in interference proceedings in the United States Patent and Trademark Office, or USPTO, to determine priority of invention. We may also be required to participate in interference proceedings involving our issued patents.

We also rely on trade secrets and know-how, which are not protected by patents, to maintain our competitive position. We require our officers, employees, consultants and advisors to execute proprietary information and invention and assignment agreements upon commencement of their relationships with us. These agreements provide that all confidential information developed or made known to the individual during the course of our relationship must be kept confidential, except in specified circumstances. These agreements also provide that all inventions developed by the individual on behalf of us must be assigned to us and that the individual will cooperate with us in connection with securing patent protection on the invention if we wish to pursue such protection. There can be no assurance, however, that these agreements will provide meaningful protection for our inventions, trade secrets or other proprietary information in the event of unauthorized use or disclosure of such information.

We also execute confidentiality agreements with outside collaborators. However, disputes may arise as to the ownership of proprietary rights to the extent that outside collaborators apply technological information to our projects that are developed independently by them or others, or apply our technology to outside projects, and there can be no assurance that any such disputes would be resolved in our favor. In addition, any of these parties may breach the agreements and disclose our confidential information or our competitors might learn of the information in some other way. If any trade secret, know-how or other technology not protected by a patent were to be disclosed to or independently developed by a competitor, our business, results of operations and financial condition could be adversely affected.

COMPETITION

The pharmaceutical and biotechnology industries are highly competitive and characterized by rapidly evolving technology and intense research and development efforts. We expect to compete with companies, including major international pharmaceutical companies, and other institutions that have substantially greater financial, research and development, marketing and sales capabilities and have substantially greater experience in undertaking preclinical and clinical testing of products, obtaining regulatory approvals and marketing and selling biopharmaceutical products. We will face competition based on, among other things, product efficacy and safety, the timing and scope of regulatory approvals, product ease of use and price.

Diabetes Treatments

We believe that AFREZZA has important competitive advantages in the delivery of insulin when compared with currently known alternatives. However, new drugs or further developments in alternative drug delivery methods may provide greater therapeutic benefits, or comparable benefits at lower cost, than AFREZZA. There can be no assurance that existing or new competitors will not introduce products or processes competitive with or superior to our product candidates.

We have set forth below more detailed information about certain of our competitors. The following is based on information currently available to us.

Rapid-acting (Injected) Insulin

Currently, there is no approved insulin product that is absorbed into the bloodstream as rapidly as AFREZZA, i.e., reaching peak levels within 12 to 15 minutes after administration. There are several formulations of "rapid-acting" insulin analogs that reach peak insulin levels within 45 to 90 minutes after injection. The principal products in this category are insulin lispro, which is marketed by Eli Lilly & Company, or Lilly; insulin aspart, which is marketed by Novo Nordisk A/S, or Novo Nordisk; and insulin glulisine, which is marketed by Sanofi.

Several insulin products in development are reported to have a time-action profile that is more rapid than that of the currently available rapid-acting insulin analogs. Halozyme Therapeutics, Inc. has conducted Phase 2 clinical studies to evaluate the safety and efficacy of a formulation of human insulin or an insulin analog that is co-administered with human hyaluronidase enzyme. This enzyme temporarily degrades a naturally occurring, space-filling substance that is a major component of normal tissues throughout the body, thereby facilitating the penetration and diffusion of insulin that is injected under the skin.

Novo Nordisk is conducting Phase 3 clinical studies of NN1218, an insulin analog that is intended to provide faster onset of action than aspart.

Biodel, Inc. has conducted a Phase 2 clinical trial of BIOD-123, a formulation of human insulin with certain excipients that increase the rate of absorption following injection.

Inhaled Insulin Delivery Systems

In January 2006, Exubera®, developed by Pfizer in collaboration with Nektar Therapeutics, Inc., was approved for the treatment of adults with type 1 and type 2 diabetes. Exubera® was slow to gain market acceptance and, in October 2007, Pfizer announced that it was discontinuing the product. In September 2008, we announced a

collaboration agreement with Pfizer pursuant to which certain patients with a continuing medical need for inhaled insulin were transitioned to AFREZZA on a compassionate use basis. Pfizer subsequently withdrew the NDA for Exubera from the FDA.

In January 2008, Novo Nordisk announced that it was halting development of its inhaled insulin product, having reached the conclusion that the product did not have adequate commercial potential.

In March 2008, Lilly announced that it was terminating the development of its AIR ® inhaled insulin system. Lilly stated that this decision resulted from increasing uncertainties in the regulatory environment and after a thorough evaluation of the evolving commercial and clinical potential of its product compared to existing medical therapies.

In August 2013, Dance Biopharm, Inc. announced that it had conducted a Phase 1/2 clinical study of an inhaled insulin product that utilizes a liquid formulation of human insulin, dispensed through a handheld electronic aerosol device.

Non-insulin Medications

We expect that AFREZZA, if approved, will compete with currently available non-insulin medication products for type 2 diabetes. These products include the following:

- GLP-1 agonists, such as exenatide or liraglutide, which mimic a naturally occurring hormone that stimulates the pancreas to secrete insulin when blood glucose levels are high.
- Inhibitors of dipeptidyl peptidase IV, such as sitagliptin or saxagliptin, are a class of drugs that work by blocking the enzyme that normally degrades GLP-1.
- Sulfonylureas and meglitinides, which are classes of drugs that act on the pancreatic cells to stimulate the secretion of insulin.
- Thiazolidinediones, such as pioglitizone, and biguanides, such as metformin, which lower blood glucose by improving the sensitivity of cells to insulin, or diminishing insulin resistance.
- Alpha-glucosidase inhibitors, which lower the amount of glucose absorbed from the intestines, thereby reducing the rise in blood glucose that occurs after a meal.
- SGLT-2 inhibitors, such as dapagliflozin and canagliflozin, are a new class of medications that lower blood glucose by increasing glucose excretion in urine.

GOVERNMENT REGULATION AND PRODUCT APPROVAL

The FDA and comparable regulatory agencies in state, local and foreign jurisdictions impose substantial requirements upon the clinical development, manufacture and marketing of medical devices and new drug and biologic products. These agencies, through regulations that implement the Federal Food, Drug, and Cosmetic Act, as amended, or FDCA, and other regulations, regulate research and development activities and the development, testing, manufacture, labeling, storage, shipping, approval, recordkeeping, advertising, promotion, sale and distribution of such products. In addition, if any of our subsequently approved products are marketed abroad, they will also be subject to export requirements and to regulation by foreign governments. The regulatory approval process is generally lengthy, expensive and uncertain. Failure to comply with applicable FDA and other regulatory requirements can result in sanctions being imposed on us or the manufacturers of our products, including hold letters on clinical research, civil or criminal fines or other penalties, product recalls, or seizures, or total or partial suspension of production or injunctions, refusals to permit products to be imported into or exported out of the United States, refusals of the FDA to grant approval of drugs or to allow us to enter into government supply contracts, withdrawals of previously approved marketing applications and criminal prosecutions.

The steps typically required before an unapproved new drug or biologic product for use in humans may be marketed in the United States include:

- Preclinical studies that include laboratory evaluation of product chemistry and formulation, as well as animal studies to assess the potential safety and efficacy of the product. Certain preclinical tests must be conducted in compliance with good laboratory practice regulations. Violations of these regulations can, in some cases, lead to invalidation of the studies, or requiring such studies to be repeated. In some cases, long-term preclinical studies are conducted while clinical studies are ongoing.
- Submission to the FDA of an investigational new drug application, or IND, which must become effective before human clinical trials may commence. The results of the preclinical studies are submitted to the FDA as part of the IND. Unless the FDA objects, the IND becomes effective 30 days following receipt by the FDA.
- Approval of clinical protocols by independent institutional review boards, or IRBs, at each of the participating clinical centers conducting a study. The IRBs consider, among other things, ethical factors, the potential risks to individuals participating in the trials and the potential liability of the institution. The IRB also approves the consent form signed by the trial participants.
- Adequate and well-controlled human clinical trials to establish the safety and efficacy of the product. Clinical trials involve the administration of the drug to healthy volunteers or to patients under the supervision of a qualified medical investigator according to an approved protocol. The clinical trials are conducted in accordance with protocols that detail the objectives of the study, the parameters to be used to monitor participant safety and efficacy or other criteria to be evaluated. Each protocol is submitted to the FDA as part of the IND. Human clinical trials are typically conducted in the following four sequential phases that may overlap or be combined:
  - In Phase 1, the drug is initially introduced into a small number of individuals and tested for safety, dosage tolerance, absorption, metabolism, distribution and excretion. Phase 1 clinical trials are often conducted in healthy human volunteers and such cases do not provide evidence of efficacy. In the case of severe or life-threatening diseases, the initial human testing is often conducted in patients rather than healthy volunteers. Because these patients already have the target disease, these studies may provide initial evidence of efficacy that would traditionally be obtained in Phase 2 clinical trials. Consequently, these types of trials are frequently referred to as Phase 1/2 clinical trials. The FDA receives reports on the progress of each phase of clinical testing and it may require the modification, suspension or termination of clinical trials if it concludes that an unwarranted risk is presented to patients or healthy volunteers.
  - Phase 2 involves clinical trials in a limited patient population to further identify any possible adverse effects and safety risks, to determine the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.
  - Phase 3 clinical trials are undertaken to further evaluate dosage, clinical efficacy and to further test for safety in an expanded patient population at geographically dispersed clinical study sites. Phase 3 clinical trials usually include a broader patient population so that safety and efficacy can be substantially established. Phase 3 clinical trials cannot begin until Phase 2 evaluation demonstrates that a dosage range of the product may be effective and has an acceptable safety profile.
  - Phase 4 clinical trials are performed if the FDA requires, or a company pursues, additional clinical trials after a product is approved. These clinical trials may be made a condition to be satisfied after a drug receives approval. The results of Phase 4 clinical trials can confirm the effectiveness of a product candidate and can provide important safety information to augment the FDA's voluntary adverse drug reaction reporting system.
- Concurrent with clinical trials and preclinical studies, companies also must develop information about the chemistry and physical characteristics of the drug and finalize a process for manufacturing the product in accordance with the FDA's current good manufacturing practices, or cGMP, requirements for drug products. The manufacturing process must be capable of consistently producing quality batches of the

product and the manufacturer must develop methods for testing the quality, purity, and potency of the final products. Additionally, appropriate packaging must be selected and tested and chemistry stability studies must be conducted to demonstrate that the product does not undergo unacceptable deterioration over its shelf-life.

- Submission to the FDA of an NDA based on the clinical trials. The results of product development, preclinical studies, and clinical trials are submitted to the FDA in the form of an NDA for approval of the marketing and commercial shipment of the product. Under the Pediatric Research Equity Act, NDAs are required to include an assessment, generally based on clinical study data, of the safety and efficacy of drugs for all relevant pediatric populations. The statute provides for waivers or deferrals in certain situations but we can make no assurances that such situations will apply to us or our product candidates.

In its review of an NDA, the FDA may also convene an advisory committee of external experts to provide input on certain review issues relating to risk, benefit and interpretation of clinical trial data. The FDA may delay approval of an NDA if applicable regulatory criteria are not satisfied and/or the FDA requires additional testing or information. Before approving an NDA, the FDA may inspect the facilities at which the product is manufactured and will not approve the product unless the manufacturing facility complies with cGMPs and will also inspect clinical trial sites for integrity of data supporting safety and efficacy. The FDA will issue either an approval of the NDA or a Complete Response Letter, detailing the deficiencies and information required in order for reconsideration of the NDA.

Medical products containing a combination of new drugs, biological products, or medical devices are regulated as “combination products” in the United States. A combination product generally is defined as a product comprised of components from two or more regulatory categories (e.g., drug/device, device/biologic, drug/biologic). Each component of a combination product is subject to the requirements established by the FDA for that type of component, whether a new drug, biologic, or device. In order to facilitate pre-market review of combination products, the FDA designates one of its centers to have primary jurisdiction for the pre-market review and regulation of the overall product. The determination whether a product is a combination product or two separate products is made by the FDA on a case-by-case basis. The FDA considers AFREZZA to be a drug-device combination product, so the review of our NDA for AFREZZA involves reviews within the Division of Metabolism and Endocrinology Products and the Division of Pulmonary, Allergy and Rheumatology Products, both within the FDA’s Center for Drug Evaluation and Research, or CDER, as well as review within the Center for Devices and Radiological Health, the Center within the FDA that reviews Medical Devices. CDER’s Division of Metabolism and Endocrinology Products is the lead group and obtains consulting reviews from the other two FDA groups.

The testing and approval process requires substantial time, effort and financial resources. Data that we submit are subject to varying interpretations, and the FDA and comparable regulatory authorities in foreign jurisdictions may not agree that our product candidates have been shown to be safe and effective. We cannot be certain that any approval of our products will be granted on a timely basis, if at all. If any of our products are approved for marketing by the FDA, we will be subject to continuing regulation by the FDA, including record-keeping requirements, reporting of adverse experiences with the product, submitting other periodic reports, drug sampling and distribution requirements, notifying the FDA and gaining its approval of certain manufacturing or labeling changes, and complying with certain electronic records and signature requirements. Prior to and following approval, if granted, all manufacturing sites are subject to inspection by the FDA and other national regulatory bodies and must comply with cGMP, QSR and other requirements enforced by the FDA and other national regulatory bodies through their facilities inspection program. Foreign manufacturing establishments must comply with similar regulations. In addition, our drug-manufacturing facilities located in Danbury and the facilities of our insulin supplier, the supplier(s) of our Technosphere material and the supplier(s) of our inhaler and cartridges are subject to federal registration and listing requirements and, if applicable, to state licensing requirements. Failure, including those of our suppliers, to obtain and maintain applicable federal registrations or state licenses, or to meet the inspection criteria of the FDA or the other national regulatory bodies, would disrupt our manufacturing processes and would harm our business. In complying with standards set forth in these regulations, manufacturers must continue to expend time, money and effort in the area of production and quality control to ensure full compliance. Currently, we believe we are operating under all of the necessary guidelines and permits.

As a drug-device combination, we currently expect that our inhaler will be approved, if at all, as part of the NDA for AFREZZA. However, numerous device regulatory requirements still apply to the device part of the drug-device combination. These include:

- product labeling regulations;
- general prohibition against promoting products for unapproved or "off-label" uses;
- corrections and removals (*e.g.*, recalls);
- establishment registration and device listing;
- general prohibitions against the manufacture and distribution of adulterated and misbranded devices; and
- the Medical Device Reporting regulation, which requires that manufacturers report to the FDA if their device may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if it were to recur.

Further, the company we contract with to manufacture our inhaler and cartridges will be subject to the QSR, which requires manufacturers to follow elaborate design, testing, control, documentation and other quality assurance procedures during the manufacturing process of medical devices, among other requirements.

Failure to adhere to regulatory requirements at any stage of development, including the preclinical and clinical testing process, the review process, or at any time afterward, including after approval, may result in various adverse consequences. These consequences include action by the FDA or another national regulatory body that has the effect of delaying approval or refusing to approve a product; suspending or withdrawing an approved product from the market; seizing or recalling a product; or imposing criminal penalties against the manufacturer. In addition, later discovery of previously unknown problems may result in restrictions on a product, its manufacturer, or the NDA holder, or market restrictions through labeling changes or product withdrawal. Also, new government requirements may be established or current government requirements may be changed at any time, which could delay or prevent regulatory approval of our products under development. We cannot predict the likelihood, nature or extent of adverse governmental regulation that might arise from future legislative or administrative action, either in the United States or abroad.

In addition, the FDA imposes a number of complex regulations on entities that advertise and promote drugs, which include, among other requirements, standards for and regulations of direct-to-consumer advertising, off-label promotion, industry sponsored scientific and educational activities, and promotional activities involving the Internet. The FDA has very broad enforcement authority under the FDCA, and failure to comply with these regulations can result in penalties, including the issuance of a warning letter directing us to correct deviations from FDA standards, including corrective advertising to healthcare providers, a requirement that future advertising and promotional materials be pre-cleared by the FDA, and state and federal civil and criminal investigations and prosecutions.

Products manufactured in the United States and marketed outside the United States are subject to certain FDA regulations, as well as regulation by the country in which the products are to be sold. We also would be subject to foreign regulatory requirements governing clinical trials and drug product sales if products are studied or marketed abroad. Whether or not FDA approval has been obtained, approval of a product by the comparable regulatory authorities of foreign countries usually must be obtained prior to the marketing of the product in those countries. The approval process varies from jurisdiction to jurisdiction and the time required may be longer or shorter than that required for FDA approval.

Product development and approval within this regulatory framework may take a number of years, involve the expenditure of substantial resources and are uncertain. Many drug products ultimately do not reach the market because they are not found to be safe or effective or cannot meet the FDA's other regulatory requirements. In addition, there can be no assurance that the current regulatory framework will not change or that additional regulation will not arise at any stage of our product development that may affect approval, delay the submission or review of an application or require additional expenditures by us. There can be no assurance that we will be able to obtain necessary regulatory clearances or approvals on a timely basis, if at all, for any of our product

candidates under development, and delays in receipt or failure to receive such clearances or approvals, the loss of previously received clearances or approvals, or failure to comply with existing or future regulatory requirements could have a material adverse effect on our business and results of operations.

In addition to the foregoing, we are subject to numerous federal, state and local laws relating to such matters as laboratory practices, the experimental use of animals, the use and disposal of hazardous or potentially hazardous substances, controlled drug substances, privacy of individually identifiable healthcare information, safe working conditions, manufacturing practices, environmental protection and fire hazard control.

Healthcare Regulatory and Pharmaceutical Pricing

If our product candidates are approved by the FDA, government coverage and reimbursement policies will both directly and indirectly affect our ability to successfully commercialize our product candidates, and such coverage and reimbursement policies will be affected by future healthcare reform measures. Government health administration authorities, private health insurers and other organizations generally decide which drugs they will pay for and establish reimbursement levels for healthcare. In particular, in the United States, private health insurers and other third-party payors often provide reimbursement for products and services based on the level at which the government (through the Medicare or Medicaid programs) provides reimbursement for such treatments. In the United States, the European Union and other potentially significant markets for our product candidates, government authorities and third-party payors are increasingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and therapies, which has resulted in lower average selling prices. Further, the increased emphasis on managed healthcare in the United States and on country and regional pricing and reimbursement controls in the European Union will put additional pressure on product pricing, reimbursement and usage, which may adversely affect our future product sales and results of operations. These pressures can arise from rules and practices of managed care groups, judicial decisions and governmental laws and regulations related to Medicare, Medicaid and healthcare reform, pharmaceutical reimbursement policies and pricing in general.

The United States and some foreign jurisdictions have enacted or are considering a number of additional legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. Among policy makers and payors in the U.S. and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives, including, most recently, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively, PPACA, enacted in March 2010. The Physician Payments Sunshine Act within the PPACA, and its implementing regulations, require certain manufacturers of drugs, devices, biological and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report information related to certain payments or other transfers of value made or distributed to physicians and teaching hospitals, or to entities or individuals at the request of, or designated on behalf of, the physicians and teaching hospitals and to repot annually certain ownership and investment interests held by physicians and their immediate family members.

Further, if a drug product is reimbursed by Medicare, Medicaid or other federal or state healthcare programs, we, including our sales, marketing and scientific/educational grant programs must comply with the False Claims Act, as amended, the federal Anti-Kickback Statute, as amended, and similar state laws. If a drug product is reimbursed by Medicare or Medicaid, pricing and rebate programs must comply with, as applicable, the Medicaid rebate requirements of the Omnibus Budget Reconciliation Act of 1990, as amended, and the Medicare Prescription Drug Improvement and Modernization Act of 2003. Additionally, PPACA substantially changes the way healthcare is financed by both governmental and private insurers. Among other cost containment measures, PPACA establishes: an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents; a new Medicare Part D coverage gap discount program; and a new formula that increases the rebates a manufacturer must pay under the Medicaid Drug Rebate Program. In the future, there may continue to be additional proposals relating to the reform of the U.S. health care system, some

of which could further limit the prices we are able to charge for our products, or the amounts of reimbursement available for our products. If drug products are made available to authorized users of the Federal Supply Schedule of the General Services Administration, additional laws and requirements apply. All of these activities are also potentially subject to federal and state consumer protection and unfair competition laws.

In addition, we may be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology and Clinical Health Act, or HITECH, and its implementing regulations, imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's privacy and security standards directly applicable to "business associates" — independent contractors or agents of covered entities that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Also, many states have similar healthcare statutes or regulations that apply to items and services reimbursed under Medicaid and other state programs, or, in several states, that apply regardless of the payer. Additional state laws require pharmaceutical companies to implement a comprehensive compliance program and/or limit expenditure for, or payments to, individual medical or health professionals.

We may incur significant costs to comply with these laws and regulations now or in the future. If our operations are found to be in violation of any of the federal and state laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including criminal and significant civil monetary penalties, damages, fines, imprisonment, exclusion of products from reimbursement under government programs, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

RESEARCH AND DEVELOPMENT EXPENSES; LONG-LIVED ASSETS

A significant portion of our operating expenses relates to research and development. Our research and development expenses totaled $100.0 million, $101.5 million and $109.7 million for the years ended December 31, 2011, 2012 and 2013, respectively.

Our long-lived assets located in the United States totaled $193.0 million, $184.0 million and $176.6 million as of December 31, 2011, 2012 and 2013, respectively.

EMPLOYEES

As of December 31, 2013, we had 265 full-time employees. Nine of these employees were engaged in basic research and development, 113 in manufacturing, 79 in clinical research and development, regulatory affairs and quality assurance and 64 in administration, finance, management, information systems, marketing, corporate development and human resources. Thirty-six of these employees had a Ph.D. degree and/or M.D. degree and were engaged in activities relating to research and development, manufacturing, quality assurance or business development.

None of our employees are subject to a collective bargaining agreement. We believe relations with our employees are good.

CORPORATE INFORMATION

We were incorporated in the State of Delaware on February 14, 1991. Our principal executive offices are located at 28903 North Avenue Paine, Valencia, California 91355, and our telephone number at that address is (661) 775-5300. MannKind Corporation and the MannKind Corporation logo are our service marks. Our website address is http://www.mannkindcorp.com. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to reports filed pursuant to Sections 13(a) and 15(d) of the

Securities Exchange Act of 1934, as amended, or the Exchange Act, are available free of charge on our website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The contents of these websites are not incorporated into this Annual Report. Further, our references to the URLs for these websites are intended to be inactive textual reference only.

RECENT EVENTS

On February 28, 2014, we amended our existing facility agreement dated July 1, 2013, or the Facility Agreement, with Deerfield Private Design Fund II, L.P., or Deerfield Private Design Fund, and Deerfield Private Design International II, L.P., referred to collectively as Deerfield, to provide for the issuance of tranche B notes to Deerfield in a maximum aggregate principal amount equal to (x) if the FDA approves the NDA for AFFREZZA and Deerfield purchases the fourth tranche of 9.75% Senior Convertible Notes due 2019, or 2019 notes, originally issuable pursuant to the Facility Agreement, 150% of the aggregate principal amount of 2019 notes that Deerfield has converted into our common stock on and after the effective date of the amendment, up to $90.0 million, and (y) otherwise, 33.33% of the aggregate principal amount of 2019 notes that Deerfield has converted into our common stock on and after the effective date of the amendment, up to $20.0 million, in each case subject to the satisfaction of certain other conditions. Any tranche B notes, if and when issued, would bear interest at the rate of 9.75% per year, subject to reduction to 8.75% if we enter into a collaboration with a third party to commercialize AFFREZZA, on the outstanding principal amount, payable in cash quarterly in arrears on the last business day of December, March, June and September of each year. We are required to repay 25% of the original principal amount of any tranche B notes on the third, fourth, fifth and sixth anniversaries of the applicable issue dates of such notes, provided that the entire outstanding principal amount of all tranche B notes will become due and payable no later than December 31, 2019. The tranche B notes will be prepayable without penalty or premium commencing two years after issuance thereof.

In addition, pursuant to the amendment, the outstanding 2019 notes held by Deerfield were amended and restated such that Deerfield may, subject to certain limitations, convert up to an additional $60.0 million principal amount under such 2019 notes into common stock after the effective date of the amendment, at a minimum conversion price of $5.00 per share unless we otherwise consent. We also agreed to register for resale up to 12,000,000 shares of common stock issuable upon conversion of the outstanding 2019 notes, as amended and restated, as of the date of the amendment.

On March 3, 2014, we entered into two At-The-Market Issuance Sales Agreements, or the ATM Agreements, one with MLV & Co. LLC, or MLV, and one with Meyers Associates, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P.), or Brinson Patrick, pursuant to which we may issue and sell our common stock having aggregate sales proceeds of up to $50.0 million from time to time through MLV or Brinson Patrick, acting as our sales agents. We currently anticipate that all or substantially all sales of common stock under the ATM Agreements will be made in “at the market” offerings as defined in Rule 415 of the Securities Act of 1933, as amended, or the Securities Act. We have not yet sold or issued any shares of our common stock under the ATM Agreements.

For additional information relating to these recent events, see Section 9B of Part II of this Annual Report on Form 10-K.

SCIENTIFIC ADVISORS

We seek advice from a number of leading scientists and physicians on scientific, technical and medical matters. These advisors are leading scientists in the areas of pharmacology, chemistry, immunology and biology. Our scientific advisors are consulted regularly to assess, among other things:

- our research and development programs;
- the design and implementation of our clinical programs;
- our patent and publication strategies;
- market opportunities from a clinical perspective;
- new technologies relevant to our research and development programs; and
- specific scientific and technical issues relevant to our business.

Our diabetes program has been supported by the following scientific advisors (and their primary affiliations):

Name	Primary Affiliation
Geremia Bolli	University of Perugia
Steven Edelman, MD	University of California, San Diego
Brian Frier, MD, FECP, BS	Edinburgh Royal Infirmary
Lois Jovanovic, MD	Sansum Medical Research Institute
Mark Peyrot, MD	Loyola College Center
Daniel Porte, MD	University of California, San Diego
Julio Rosenstock, MD	Dallas Diabetes and Endocrinology Center
Jay Skyler, MD, MACP	University of Miami, Diabetes Research Institute

EXECUTIVE OFFICERS OF THE REGISTRANT

The following table sets forth our current executive officers and their ages as of December 31, 2013:

Name	Age	Position(s)
Alfred E. Mann	88	Chairman of the Board of Directors and Chief Executive Officer
Hakan S. Edstrom	63	President, Chief Operating Officer and Director
Matthew J. Pfeffer	56	Corporate Vice President and Chief Financial Officer
Juergen A. Martens, Ph.D.	58	Corporate Vice President, Technical Operations and Chief Technical Officer
Diane M. Palumbo	60	Corporate Vice President, Human Resources
David B. Thomson, Ph.D., J.D. .	47	Corporate Vice President, General Counsel and Secretary

Alfred E. Mann has been one of our directors since April 1999, our Chairman of the Board since December 2001 and our Chief Executive Officer since October 2003. He founded and formerly served as Chairman and Chief Executive Officer of MiniMed, Inc., a publicly traded company focused on diabetes therapy and microinfusion drug delivery that was acquired by Medtronic, Inc. in August 2001. Mr. Mann also founded and, from 1972 through 1992, served as Chief Executive Officer of Pacesetter Systems, Inc. and its successor, Siemens Pacesetter, Inc., a manufacturer of cardiac pacemakers, now the Cardiac Rhythm Management Division of St. Jude Medical Corporation. Mr. Mann founded and since 1993, has served as Chairman and until January 2008, as Co-Chief Executive Officer of Advanced Bionics Corporation, a medical device manufacturer focused on neurostimulation to restore hearing to the deaf and to treat chronic pain and other neural deficits, that was acquired by Boston Scientific Corporation in June 2004. In January 2008, the former stockholders of Advanced Bionics Corporation repurchased certain segments from Boston Scientific Corporation and formed Advanced Bionics LLC for cochlear implants and Infusion Systems LLC for infusion pumps. Mr. Mann was non-executive Chairman of both entities. Advanced Bionics LLC was acquired by Sonova Holdings on December 30, 2009. Infusion Systems LLC was acquired by the Alfred E. Mann Foundation in February 2010. Mr. Mann has also founded and is non-executive Chairman of Second Sight Medical Products, Inc., which is developing a visual prosthesis for the blind; Bioness Inc., which is developing rehabilitation neurostimulation systems; Quallion LLC, which produces batteries for medical products and for the military and aerospace industries; and Stellar Microelectronics Inc., a supplier of electronic assemblies to the medical, military and aerospace industries. Mr. Mann also founded and is the managing member of PerQFlo, LLC, which is developing drug delivery systems. Mr. Mann is the managing member of the Alfred Mann Foundation and is also non-executive Chairman of Alfred Mann Institutes at the University of Southern California, AMI Purdue and AMI Technion, and the Alfred Mann Foundation for Biomedical Engineering, which is establishing additional institutes at other research universities. Mr. Mann holds bachelor's and master's degrees in Physics from the University of California at Los Angeles, honorary doctorates from Johns Hopkins University, the University of Southern California, Western University and the Technion-Israel Institute of Technology and is a member of the National Academy of Engineering.

Hakan S. Edstrom has been our President and Chief Operating Officer since April 2001 and has served as one of our directors since December 2001. Mr. Edstrom was with Bausch & Lomb, Inc., a health care product company, from January 1998 to April 2001, advancing to the position of Senior Corporate Vice President and President of Bausch & Lomb, Inc. Americas Region. From 1981 to 1997, Mr. Edstrom was with Pharmacia Corporation, where he held various executive positions, including President and Chief Executive Officer of Pharmacia Ophthalmics Inc. Mr. Edstrom was educated in Sweden and holds a master's degree in Business Administration from the Stockholm School of Economics.

Matthew J. Pfeffer has been our Corporate Vice President and Chief Financial Officer since April 2008. Previously, Mr. Pfeffer served as Chief Financial Officer and Senior Vice President of Finance and Administration of VaxGen, Inc. from March 2006 until April 2008, with responsibility for finance, tax, treasury, human resources, IT, purchasing and facilities functions. Prior to VaxGen, Mr. Pfeffer served as CFO of Cell Genesys, Inc. During his nine year tenure at Cell Genesys, Mr. Pfeffer served as Director of Finance before being named CFO in 1998. Prior to that, Mr. Pfeffer served in a variety of financial management positions at other companies, including roles as Corporate Controller, Manager of Internal Audit and Manager of Financial Reporting. Mr. Pfeffer began his career at Price Waterhouse. Mr. Pfeffer graduated from the University of California, Berkeley and is a Certified Public Accountant.

Juergen A. Martens, Ph.D. has been our Corporate Vice President of Operations and Chief Technology Officer since September 2005. From 2000 to August 2005, he was employed by Nektar Therapeutics most recently as Vice President of Pharmaceutical Technology Development. Previously, he held technical management positions at Aerojet Fine Chemicals from 1998 to 2000 and at FMC Corporation from 1996 to 1998. From 1987 to 1996, Dr. Martens held a variety of management positions with increased responsibility in R&D, plant management, and business process development at Lonza, in Switzerland and in the United States. Dr. Martens holds a bachelor's degree in chemical engineering from the Technical College Mannheim/Germany, a bachelor's and master's degree in Chemistry and a doctorate in Physical Chemistry from the University of Marburg/Germany.

Diane M. Palumbo has been our Corporate Vice President of Human Resources since November 2004. From July 2003 to November 2004, she was President of her own human resources consulting company. From June 1991 to July 2003, Ms. Palumbo held various positions with Amgen, Inc., a California-based biopharmaceutical company, including Senior Director, Human Resources. In addition, Ms. Palumbo has held Human Resources positions with Unisys and Mitsui Bank Ltd. of Tokyo. She holds a master's degree in Business Administration from St. John's University, New York and a bachelor's degree, magna cum laude, also from St. John's University.

David B. Thomson, Ph.D., J.D. has been our Corporate Vice President, General Counsel and Corporate Secretary since January 2002. Prior to joining us, he practiced corporate/commercial and securities law at a major Toronto law firm. Earlier in his career, Dr. Thomson was a post-doctoral fellow at the Rockefeller University. Dr. Thomson obtained his bachelor's degree, master's degree and Ph.D. degree from Queens University and obtained his J.D. degree from the University of Toronto.

Executive officers serve at the discretion of our Board of Directors. There are no family relationships between any of our directors and executive officers.

Item 1A. *Risk Factors*

You should consider carefully the following information about the risks described below, together with the other information contained in this Annual Report before you decide to buy or maintain an investment in our common stock. We believe the risks described below are the risks that are material to us as of the date of this Annual Report. Additional risks and uncertainties that we are unaware of may also become important factors that affect us. If any of the following risks actually occur, our business, financial condition, results of operations and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock could decline, and you may lose all or part of the money you paid to buy our common stock.

RISKS RELATED TO OUR BUSINESS

We depend heavily on the successful development and commercialization of our lead product candidate, AFREZZA, which is not yet approved.

To date, we have not commercialized any product candidates. We have expended significant time, money and effort in the development of our lead product candidate, AFREZZA, which has not yet received regulatory approval and which may not be approved by the FDA in a timely manner, or at all. Our other product candidates are generally in early clinical or preclinical development. We anticipate that in the near term, our ability to generate revenues will depend on the successful development and commercialization of AFREZZA.

In August 2013, we released the results of two Phase 3 clinical studies of AFREZZA, both of which met their primary efficacy endpoints and safety objectives.

In October 2013, we submitted the full results of these studies to the FDA as an amendment to our AFREZZA NDA. The Endocrinologic and Metabolic Drugs Advisory Committee of the FDA is scheduled to discuss our NDA on April 1, 2014. The target date for the FDA to complete its review of the AFREZZA NDA is April 15, 2014. However, the data collected from these clinical studies may not be sufficient to support FDA approval. Moreover, there can be no assurance that we will satisfy all of the FDA's requirements for approval of AFREZZA. The FDA could also request that we conduct additional clinical studies in order to provide sufficient data for approval of AFREZZA. There can be no assurance that we will obtain approval of the NDA in a timely manner, or at all.

We must receive the necessary approvals from the FDA before AFREZZA can be marketed and sold in the United States and must receive the necessary approvals from similar foreign regulatory agencies before AFREZZA can be marketed outside of the United States. Even if we were to receive regulatory approval, we ultimately may be unable to gain market acceptance of AFREZZA for a variety of reasons, including the treatment and dosage regimen, potential adverse effects, the availability of alternative treatments and lack of coverage or adequate reimbursement. If we fail to commercialize AFREZZA, our business, financial condition and results of operations will be materially and adversely affected.

We have sought to develop our product candidates through our internal research programs. All of our product candidates will require additional research and development and, in some cases, significant preclinical, clinical and other testing prior to seeking regulatory approval to market them. Accordingly, these product candidates will not be commercially available for a number of years, if at all.

A significant portion of the research that we have conducted involves new and unproven compounds and technologies, including AFREZZA and our Technosphere platform technology. Even if our research programs identify candidates that initially show promise, these candidates may fail to progress to clinical development for any number of reasons, including discovery upon further research that these candidates have adverse effects or other characteristics that indicate they are unlikely to be effective. In addition, the clinical results we obtain at one stage are not necessarily indicative of future testing results. If we fail to successfully complete the development and commercialization of AFREZZA or develop or expand our other product candidates, or are significantly delayed in doing so, our business and results of operations will be harmed and the value of our stock could decline.

We have a history of operating losses, we expect to continue to incur losses and we may never generate positive cash flow from operations.

We are a development stage company with no commercial products. All of our product candidates are still being developed, and all but AFREZZA are still in the early stages of development. Our product candidates will require significant additional development, clinical studies, regulatory clearances and additional investment before they can be commercialized. We cannot be certain when AFREZZA may be approved or if it will be approved.

We have never been profitable or generated positive cash flow from operations and, as of December 31, 2013, we had incurred a cumulative net loss of $2.3 billion. The cumulative net loss has resulted principally from costs

incurred in our research and development programs, the write-off of goodwill and general operating expenses. We expect to make substantial expenditures and to incur increasing operating losses in the future in order to further develop and commercialize our product candidates, including costs and expenses to complete clinical studies, seek regulatory approvals and market our product candidates, including AFREZZA. This cumulative net loss may increase significantly as we continue development and clinical study efforts. Our losses have had, and are expected to continue to have, an adverse impact on our working capital, total assets and stockholders' equity. As of December 31, 2013, we had a stockholders' deficit of $30.7 million. Our ability to achieve and sustain positive cash flow from operations and profitability depends upon obtaining regulatory approvals for and successfully commercializing AFREZZA, either alone or with third parties. We do not currently have the required approvals to market any of our product candidates, and we may not receive them. We may not generate positive cash flow from operations or be profitable even if we succeed in commercializing any of our product candidates. As a result, we cannot be sure when we will generate positive cash flow from operations or become profitable, if at all.

We will be required to raise additional capital to fund our operations, and our inability to do so could raise substantial doubt about our ability to continue as a going concern.

Based on our current expectations, we believe that our existing capital resources will enable us to continue planned operations at least into the third quarter of 2014. We cannot assure you that our plans will not change or that changed circumstances will not result in the depletion of our capital resources more rapidly than we currently anticipate. We will need to raise additional funds, through the sale of equity or debt securities, the entry into strategic business collaborations, the establishment of other funding facilities, licensing arrangements, asset sales, through additional borrowings from The Mann Group, or other means, in order to continue the development and commercialization of AFREZZA and other product candidates and to support our other ongoing activities. It may be difficult for us to raise additional funds on favorable terms, or at all. As of December 31, 2013, we had a stockholders' deficit of $30.7 million which may raise concerns about our solvency and affect our ability to raise additional capital. The amount of additional funds we need will depend on a number of factors, including:

- the election of any or all of the holders of our 5.75% senior convertible notes due 2015, or the 2015 notes, to require us to repay or repurchase such notes if and when required;
- our ability to refinance existing indebtedness, including indebtedness under the 2015 notes which mature in August 2015;
- the satisfaction of the conditions to the sale and purchase of 2019 notes and/or tranche B notes under the Facility Agreement, or failing the satisfaction of such conditions, whether Deerfield chooses to waive satisfaction of such conditions and purchase additional 2019 notes and/or tranche B notes;
- the extent to which the 2015 notes or 2019 notes are converted into shares of our common stock;
- rate of progress and costs of our clinical studies and research and development activities, including costs of procuring clinical materials and operating our manufacturing facilities;
- our obligation to make milestone payments pursuant to the milestone rights, or the Milestone Rights, issued to the Deerfield Private Design Fund and Horizon Santé FLML SÁRL, referred to collectively as the Milestone Purchasers pursuant to our Milestone Rights Purchase Agreement dated July 1, 2013, or the Milestone Agreement;
- our success in establishing strategic business collaborations or other sales or licensing of assets, and the timing and amount of any payments we might receive from any such transactions;
- the costs of preparing applications for regulatory approvals for our product candidates, including AFREZZA, either ourselves or with any commercialization partner;
- actions taken by the FDA and other regulatory authorities affecting our product candidates and competitive products;

- our degree of success in commercializing AFREZZA assuming receipt of required regulatory approvals;
- the emergence of competing technologies and products and other market developments;
- the costs of preparing, filing, prosecuting, maintaining and enforcing patent claims and other intellectual property rights or defending against claims of infringement by others;
- the level of our legal expenses;
- the costs associated with litigation; and
- the costs of discontinuing projects and technologies, and/or decommissioning existing facilities, if we undertake any such activities.

We have raised capital in the past through the sale of equity and debt securities. We may in the future pursue the sale of additional equity and/or debt securities, including sales of our common stock through the ATM Agreements, or the establishment of other funding facilities including asset based borrowings. There can be no assurances, however, that we will be able to raise additional capital on acceptable terms, or at all. Issuances of additional debt or equity securities or the conversion of any of our currently outstanding convertible debt securities into shares of our common stock or the exercise of our currently outstanding warrants for shares of our common stock could impact the rights of the holders of our common stock and may dilute their ownership percentage. Moreover, the establishment of other funding facilities may impose restrictions on our operations. These restrictions could include limitations on additional borrowing and specific restrictions on the use of our assets, as well as prohibitions on our ability to create liens, pay dividends, redeem our stock or make investments. We also may seek to raise additional capital by pursuing opportunities for the licensing or sale of certain intellectual property and other assets. We cannot offer assurances, however, that any strategic collaborations, sales of securities or sales or licenses of assets will be available to us on a timely basis or on acceptable terms, if at all. We may be required to enter into relationships with third parties to develop or commercialize products or technologies that we otherwise would have sought to develop independently, and any such relationships may not be on terms as commercially favorable to us as might otherwise be the case.

In the event that sufficient additional funds are not obtained through strategic collaboration opportunities, sales of securities, funding facilities, licensing arrangements and/or asset sales on a timely basis, we will be required to reduce expenses through the delay, reduction or curtailment of our projects, including AFREZZA development activities, or further reduction of costs for facilities and administration. Moreover, if we do not obtain such additional funds, there will be substantial doubt about our ability to continue as a going concern and increased risk of insolvency and loss of investment to the holders of our securities. As of the date hereof, we have not obtained a solvency opinion or otherwise conducted a valuation of our properties to determine whether our debts exceed the fair value of our property within the meaning of applicable solvency laws. If we are or become insolvent, investors in our stock may lose the entire value of their investment.

We do not anticipate generating operating cash flow before AFREZZA is commercialized, which we expect will require us to reach an agreement with a commercialization partner, and therefore cannot provide assurances that changed or unexpected circumstances, including, among other things, delays in obtaining regulatory approval and in identifying and reaching agreements with a commercialization partner, will not result in the depletion of our capital resources more rapidly than we currently anticipate, in which case we may be required to raise additional capital. There can be no assurances that we will be able to raise additional capital on acceptable terms, or at all. If planned operating results are not achieved or we are not successful in raising additional capital through equity or debt financings or entering into a strategic business collaboration with a pharmaceutical or biotechnology company, we will be required to reduce expenses through the delay, reduction or curtailment of our projects, including AFREZZA development activities, or further reduction of costs for facilities and administration, and there will be continued substantial doubt about our ability to continue as a going concern.

We have a substantial amount of debt pursuant to our 2015 notes and 2019 notes and may be unable to make required payments of interest and principal as they become due.

As of December 31, 2013, we had $213.5 million of outstanding debt pursuant to our 2015 notes and 2019 notes, consisting of:

- $100.0 million principal amount of 2015 notes bearing interest at 5.75% per annum and maturing on August 15, 2015; and
- $113.5 million principal amount of 2019 notes bearing interest at 9.75% per annum and maturing between 2016 and December 31, 2019.

In addition, pursuant to the Facility Agreement, we may issue up to $40.0 million principal amount of additional 2019 notes subject to receipt of approval of AFREZZA from the FDA prior to December 30, 2014 and, pursuant to the February 28, 2014 amendment to the Facility Agreement, tranche B notes in a maximum principal amount equal to (x) if the FDA approves the NDA for AFFREZZA and Deerfield purchases the fourth tranche of 2019 notes, 150% of the aggregate principal amount of the 2019 notes that Deerfield has converted into our common stock on and after the effective date of the amendment to the Facility Agreement, up to $90.0 million, and (y) otherwise, 33.33% of the aggregate principal amount of the 2019 notes that Deerfield has converted into our common stock on and after the effective date of the amendment of the Facility Agreement, up to $20.0 million, in each case subject to the satisfaction of certain other conditions. There can be no assurance that we will have sufficient resources to make any required repayments of principal under the 2015 notes, 2019 notes or, if issued, tranche B notes when required. Further, if we undergo a fundamental change, as that term is defined in the indentures governing the terms of the 2015 notes, or certain Major Transactions as defined in the Facility Agreement in respect of the 2019 notes and, if issued, tranche B notes, each holder of the applicable notes will have the option to require us to repurchase all or any portion of such holder's notes at a repurchase price of 100% of the principal amount of such notes to be repurchased plus accrued and unpaid interest, if any. The 2015 notes bear interest at the rate of 5.75% per year on the outstanding principal amount, payable in cash semiannually in arrears on February 15 and August 15 of each year, and the 2019 notes bear interest at the rate of 9.75% per year on the outstanding principal amount, payable in cash quarterly in arrears on the last business day of December, March, June and September of each year. Any tranche B notes, if and when issued, would bear interest at the rate of 9.75% per year, subject to reduction to 8.75% if we enter into a collaboration with a third party to commercialize AFFREZZA, on the outstanding principal amount, payable in cash quarterly in arrears on the last business day of December, March, June and September of each year. While we have been able to timely make our required interest payments to date, we cannot guarantee that we will be able to do so in the future. If we fail to pay interest on the 2015 notes, 2019 notes or, if issued, tranche B notes, or if we fail to repay or repurchase the 2015 notes, 2019 notes or, if issued, tranche B notes, when required, we will be in default under the indenture or other applicable instrument for such note(s), and may also suffer an event of default under the terms of other borrowing arrangements that we may enter into from time to time. Any of these events could have a material adverse effect on our business, results of operations and financial condition, up to and including the note holders initiating bankruptcy proceedings or causing us to cease operations altogether.

Our agreements with Deerfield relating to our 2019 notes, tranche B notes and the Milestone Rights contain covenants that we may not be able to meet and place restrictions on our operating and financial flexibility.

Our indebtedness under the Facility Agreement, including any indebtedness under the 2019 notes and any future indebtedness we incur as the result of our sale of additional 2019 notes and/or tranche B notes is secured by substantially all of our assets, including our intellectual property, accounts receivables, equipment, general intangibles, inventory (including the insulin inventory) and investment property, and all of the proceeds and products of the foregoing. Our obligations under the Facility Agreement and the Milestone Agreement are also secured by certain mortgages on our facilities in Danbury, Connecticut and Valencia, California.

The Facility Agreement includes customary representations, warranties and covenants by us, including restrictions on our ability to incur additional indebtedness, grant certain liens, engage in certain mergers and acquisitions, make certain distributions and make certain voluntary prepayments. Events of default under the Facility Agreement include: our failure to timely make payments due under the 2019 notes or the tranche B

notes; inaccuracies in our representations and warranties to Deerfield; our failure to comply with any of our covenants under any of the Facility Agreement, Milestone Agreement or certain other related security agreements and documents entered into in connection with the Facility Agreement, subject to a cure period with respect to most covenants; our insolvency or the occurrence of certain bankruptcy-related events; certain judgments against us; the suspension, cancellation or revocation of governmental authorizations that are reasonably expected to have a material adverse effect on our business; the acceleration of a specified amount of our indebtedness; our cash and cash equivalents, including amounts available to us under our loan arrangement with The Mann Group, falling below $25.0 million as of the last day of any fiscal quarter; our failure to timely deliver any shares issuable upon conversion of the 2019 notes; and our failure to cause the shares issuable upon conversion of the 2019 notes to be freely tradable within certain agreed upon timeframes. If one or more events of default under the Facility Agreement occurs and continues beyond any applicable cure period, the holders of the 2019 notes and tranche B notes may declare all or any portion of the 2019 notes and tranche B notes to be immediately due and payable. The Milestone Agreement includes customary representations and warranties and covenants by us, including restrictions on transfers of intellectual property related to AFREZZA. The milestones are subject to acceleration in the event we transfer our intellectual property related to AFREZZA in violation of the terms of the Milestone Agreement.

There can be no assurance that we will be able to comply with the covenants under any of the foregoing agreements, and we cannot predict whether the holders of the 2019 notes or tranche B notes would demand repayment of the outstanding balance of the 2019 notes or tranche B notes or exercise any other remedies available to such holders if we were unable to comply with these covenants. The covenants and restrictions contained in the foregoing agreements could significantly limit our ability to respond to changes in our business or competitive activities or take advantage of business opportunities that may create value for our stockholders. In addition, our inability to meet or otherwise comply with the covenants under these agreements could have an adverse impact on our financial position and results of operations and could result in an event of default under the terms of our other indebtedness, including our indebtedness under the 2015 notes. In the event of certain future defaults under the foregoing agreements for which we are not able to obtain waivers, the holders of the 2015 notes, 2019 notes and tranche B notes may accelerate all of our repayment obligations, and, with respect to the 2019 notes and tranche B notes, take control of our pledged assets, potentially requiring us to renegotiate the terms of our indebtedness on terms less favorable to us, or to immediately cease operations.

If we enter into additional debt arrangements, the terms of such additional arrangements could further restrict our operating and financial flexibility. In the event we must cease operations and liquidate our assets, the rights of any holders of our outstanding debt would be senior to the rights of the holders of our common stock to receive any proceeds from the liquidation.

If we do not achieve our projected development and commercialization goals in the timeframes we announce and expect, our business will be harmed and the market price of our common stock could decline.

For planning purposes, we estimate the timing of the accomplishment of various scientific, clinical, regulatory and other product development goals, which we sometimes refer to as milestones. These milestones may include the commencement or completion of scientific studies and clinical studies and the submission of regulatory filings. From time to time, we publicly announce the expected timing of some of these milestones. All of these milestones are based on a variety of assumptions. The actual timing of the achievement of these milestones can vary dramatically from our estimates, in many cases for reasons beyond our control, depending on numerous factors, including:

- the rate of progress, costs and results of our clinical studies and research and development activities;
- our ability to identify and enroll patients who meet clinical study eligibility criteria;
- our ability to access sufficient, reliable and affordable supplies of components used in the manufacture of our product candidates, including insulin and other materials for AFREZZA;

- the costs of expanding and maintaining manufacturing operations, as necessary;
- the extent to which our clinical studies compete for clinical sites and eligible subjects with clinical studies sponsored by other companies;
- our ability to enter into sales and marketing collaborations for AFREZZA; and
- actions by regulators.

In addition, if we do not obtain sufficient additional funds through sales of securities, strategic collaborations or the license or sale of certain of our assets on a timely basis, we will be required to reduce expenses by delaying, reducing or curtailing our development of AFREZZA. If we fail to commence or complete, or experience delays in or are forced to curtail, our proposed clinical programs or otherwise fail to adhere to our projected development goals in the timeframes we announce and expect (or within the timeframes expected by analysts or investors), our business and results of operations will be harmed and the market price of our common stock may decline.

We face substantial competition in the development of our product candidates and may not be able to compete successfully, and our product candidates may be rendered obsolete by rapid technological change.

A number of established pharmaceutical companies have or are developing technologies for the treatment of diabetes. We also face substantial competition for the development of our other product candidates.

Many of our existing or potential competitors have, or have access to, substantially greater financial, research and development, production, and sales and marketing resources than we do and have a greater depth and number of experienced managers. As a result, our competitors may be better equipped than we are to develop, manufacture, market and sell competing products. In addition, gaining favorable reimbursement is critical to the success of AFREZZA. Many of our competitors have existing infrastructure and relationships with managed care organizations and reimbursement authorities which can be used to their advantage.

The rapid rate of scientific discoveries and technological changes could result in one or more of our product candidates becoming obsolete or noncompetitive. Our competitors may develop or introduce new products that render our technology and AFREZZA less competitive, uneconomical or obsolete. Our future success will depend not only on our ability to develop our product candidates but to improve them and keep pace with emerging industry developments. We cannot assure you that we will be able to do so.

We also expect to face competition from universities and other non-profit research organizations. These institutions carry out a significant amount of research and development in the areas of diabetes and cancer. These institutions are becoming increasingly aware of the commercial value of their findings and are more active in seeking patent and other proprietary rights as well as licensing revenues.

If we fail to enter into a strategic collaboration with respect to AFREZZA, we may not be able to execute on our business model.

We have held extensive discussions with a number of pharmaceutical companies concerning a potential strategic business collaboration for AFREZZA. To date we have not reached an agreement on a collaboration with any of these companies. We cannot predict when, if ever, we will conclude an agreement with a partner. There can be no assurance that any such collaboration will be available to us on a timely basis or on acceptable terms. If we are not able to enter into a collaboration on terms that are favorable to us, we may be unable to undertake and fund product development, clinical studies, manufacturing and/or marketing activities at our own expense, which would delay or otherwise impede the commercialization of AFREZZA. Our product candidates are intended to be used by a large number of healthcare professionals who will require substantial education and support. For example, a broad base of physicians, including primary care physicians and endocrinologists, treat patients with diabetes. A large sales force would be required in order to educate these physicians about the benefits and advantages of AFREZZA and to provide adequate support for them. With respect to the commercialization of AFREZZA, if approved, if we fail to enter into collaborations, we would be required to

establish our own direct sales, marketing and distribution capabilities. Establishing these capabilities can be time-consuming and expensive and would delay our ability to commercialize AFREZZA. Because we lack experience in selling pharmaceutical products to the diabetes market, we would be at a disadvantage compared to our potential competitors, many of whom have substantially more resources and experience than we do. We, acting alone, would not initially be able to field a sales force as large as our competitors or provide the same degree of marketing support. Also, we would not be able to match our competitors' spending levels for pre-launch marketing preparation, including medical education. We cannot assure you that we will succeed in entering into acceptable collaborations, that any such collaboration will be successful or, if not, that we will successfully develop our own sales, marketing and distribution capabilities.

We will face similar challenges as we seek to develop our other product candidates. Our current strategy for developing, manufacturing and commercializing our other product candidates includes evaluating the potential for collaborating with pharmaceutical and biotechnology companies at some point in the drug development process and for these collaborators to undertake the advanced clinical development and commercialization of our product candidates. It may be difficult for us to find third parties that are willing to enter into collaborations on economic terms that are favorable to us, or at all. Failure to enter into a collaboration with respect to any other product candidate could substantially increase our requirements for capital and force us to substantially reduce our development efforts.

If we enter into collaborative agreements with respect to AFREZZA and if our third-party collaborators do not perform satisfactorily or if our collaborations fail, development or commercialization of AFREZZA may be delayed and our business could be harmed.

We may enter into license agreements, partnerships or other collaborative arrangements to support the financing, development and marketing of AFREZZA. We may also license technology from others to enhance or supplement our technologies. These various collaborators may enter into arrangements that would make them potential competitors. These various collaborators also may breach their agreements with us and delay our progress or fail to perform under their agreements, which could harm our business.

If we enter into collaborative arrangements, we will have less control over the timing, planning and other aspects of our clinical studies, and the sale and marketing of AFREZZA and our other product candidates. We cannot offer assurances that we will be able to enter into satisfactory arrangements with third parties as contemplated or that any of our existing or future collaborations will be successful.

Continued testing of our product candidates, including AFREZZA, may not yield successful results, and even if it does, we may still be unable to commercialize our product candidates.

Our research and development programs are designed to test the safety and efficacy of our product candidates through extensive nonclinical and clinical testing. We may experience numerous unforeseen events during, or as a result of, the testing process that could delay or prevent commercialization of any of our product candidates, including the following:

- safety and efficacy results obtained in our nonclinical and early clinical testing may be inconclusive or may not be predictive of results that we may obtain in our future clinical studies or following long-term use, and we may as a result be forced to stop developing a product candidate;
- the analysis of data collected from clinical studies of our product candidates may not reach the statistical significance necessary, or otherwise be sufficient to support FDA or other regulatory approval for the claimed indications;
- after reviewing preclinical and/or clinical data, we or any potential collaborators may abandon projects that we previously believed were promising; and
- our product candidates may not produce the desired effects or may result in adverse health effects or other characteristics that preclude regulatory approval or limit their commercial use if approved.

Forecasts about the effects of the use of drugs, including AFREZZA, over terms longer than the clinical studies or in much larger populations may not be consistent with the clinical results. If use of a drug results in adverse health effects or reduced efficacy or both, the FDA or other regulatory agencies may terminate our ability to market and sell the drug, may narrow the approved indications for use or otherwise require restrictive product labeling or marketing, or may require further clinical studies, which may be time-consuming and expensive and may not produce favorable results.

As a result of any of these events, we, any collaborator, the FDA, or any other regulatory authorities, may suspend or terminate clinical studies or marketing of the drug at any time. Any suspension or termination of our clinical studies or marketing activities may harm our business and results of operations and the market price of our common stock may decline.

If our suppliers fail to deliver materials and services needed for the production of AFREZZA in a timely and sufficient manner, or they fail to comply with applicable regulations, our business and results of operations would be harmed and the market price of our common stock could decline.

For AFREZZA to be commercially viable, we need access to sufficient, reliable and affordable supplies of insulin, our AFREZZA inhaler, the related cartridges and other materials. We must rely on our suppliers to comply with relevant regulatory and other legal requirements, including the production of insulin in accordance with the FDA's current Good Manufacturing Practices, or cGMP for drug products, and the production of the AFREZZA inhaler and related cartridges in accordance with Quality System Regulations, or QSRs. The supply of any of these materials may be limited or any of the manufacturers may not meet relevant regulatory requirements, and if we are unable to obtain any of these materials in sufficient amounts, in a timely manner and at reasonable prices, or if we encounter delays or difficulties in our relationships with manufacturers or suppliers, the development or manufacturing of AFREZZA may be delayed. Any such events could delay market introduction and subsequent sales of AFREZZA and, if so, our business and results of operations will be harmed and the market price of our common stock may decline.

We have never manufactured AFREZZA or any other product candidates in commercial quantities, and if we fail to develop an effective manufacturing capability for our product candidates or to engage third-party manufacturers with this capability, we may be unable to commercialize these products.

We use our Danbury, Connecticut facility to formulate AFREZZA inhalation powder, fill plastic cartridges with the powder, package the cartridges in blister packs, and place the blister packs into foil pouches. We will utilize a contract packager to do the final kitting and cartoning of foil pouched blisters containing cartridges, as well as inhalers and the package insert. Although the Danbury facility has been qualified and undergone two inspections by the FDA, our facility may need to undergo further inspection before we can distribute AFREZZA commercially. The manufacture of pharmaceutical products requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of pharmaceutical products often encounter difficulties in production, especially in scaling up initial production. These problems include difficulties with production costs and yields, quality control and assurance and shortages of qualified personnel, as well as compliance with strictly enforced federal, state and foreign regulations. If we engage a third-party manufacturer, we would need to transfer our technology to that third-party manufacturer and gain FDA approval, potentially causing delays in product delivery. In addition, our third-party manufacturer may not perform as agreed or may terminate its agreement with us.

Any of these factors could cause us to delay or suspend clinical studies, regulatory submissions or required approvals of our product candidates, could entail higher costs and may result in our being unable to effectively commercialize our products. Furthermore, if we or a third-party manufacturer fail to deliver the required commercial quantities of any product on a timely basis, and at commercially reasonable prices and acceptable quality, and we were unable to promptly find one or more replacement manufacturers capable of production at a substantially equivalent cost, in substantially equivalent volume and quality on a timely basis, we would likely be unable to meet demand for such products and we would lose potential revenues.

If any product that we develop does not become widely accepted by physicians, patients, third-party payors and the healthcare community, we may be unable to generate significant revenue, if any.

AFREZZA and our other product candidates are new and unproven. Even if any of our product candidates obtain regulatory approval, they may not gain market acceptance among physicians, patients, third-party payors and the healthcare community. Failure to achieve market acceptance would limit our ability to generate revenue and would adversely affect our results of operations.

The degree of market acceptance of AFREZZA and our other product candidates will depend on many factors, including the:

- claims for which FDA approval can be obtained, including superiority claims;
- effectiveness of our or our third party collaborator(s) efforts to educate physicians about the benefits and advantages of AFREZZA or our other products and to provide adequate support for them, and the perceived advantages and disadvantages of competitive products;
- willingness of the healthcare community and patients to adopt new technologies;
- ability to manufacture the product in sufficient quantities with acceptable quality and cost;
- perception of patients and the healthcare community, including third-party payors, regarding the safety, efficacy and benefits compared to competing products or therapies;
- convenience and ease of administration relative to existing treatment methods;
- coverage and pricing and reimbursement relative to other treatment therapeutics and methods; and
- marketing and distribution support.

Because of these and other factors, any product that we may develop may not gain market acceptance, which would materially harm our business, financial condition and results of operations.

If third-party payors do not cover any products for which we receive regulatory approval or adequately reimburse consumers for any such products, our products might not be used or purchased, which would adversely affect our revenues.

Our future revenues and ability to generate positive cash flow from operations may be affected by the continuing efforts of governments and third-party payors to contain or reduce the costs of healthcare through various means. For example, in certain foreign markets the pricing of prescription pharmaceuticals is subject to governmental control. In the United States, there has been, and we expect that there will continue to be, a number of federal and state proposals to implement similar governmental controls. We cannot be certain what legislative proposals will be adopted or what actions federal, state or private payors for healthcare goods and services may take in response to any drug pricing reform proposals or legislation. Such reforms may make it difficult to complete the development and testing of AFREZZA and our other product candidates, and therefore may limit our ability to generate revenues from sales of our product candidates and achieve profitability. Further, to the extent that such reforms have a material adverse effect on the business, financial condition and profitability of other companies that are prospective collaborators for some of our product candidates, our ability to commercialize our product candidates under development may be adversely affected.

In the United States and elsewhere, sales of prescription pharmaceuticals still depend in large part on the availability of reimbursement to the consumer from third-party payors, such as governmental and private insurance plans. Third-party payors are increasingly challenging the prices charged for medical products and services. The market for our product candidates for which we may receive regulatory approval will depend significantly on access to third-party payors' drug formularies, or lists of medications for which third-party payors provide coverage and reimbursement. The industry competition to be included in such formularies often leads to downward pricing pressures on pharmaceutical companies. Also, third-party payors may refuse to include a particular branded drug in their formularies or otherwise restrict patient access to a branded drug when

a less costly generic equivalent or other alternative is available. In addition, because each third-party payor individually approves coverage and reimbursement levels, obtaining coverage and adequate reimbursement is a time-consuming and costly process. We would be required to provide scientific and clinical support for the use of any product to each third-party payor separately with no assurance that approval would be obtained. This process could delay the market acceptance of any product and could have a negative effect on our future revenues and operating results. Even if we succeed in bringing one or more products to market, we cannot be certain that any such products would be considered cost-effective or that coverage and adequate reimbursement to the consumer would be available. Patients will be unlikely to use our products unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our products.

In addition, in many foreign countries, particularly the countries of the European Union, the pricing of prescription drugs is subject to government control. In some non-U.S. jurisdictions, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the EU provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. We may face competition for our product candidates from lower-priced products in foreign countries that have placed price controls on pharmaceutical products. In addition, there may be importation of foreign products that compete with our own products, which could negatively impact our profitability.

If we are unable to obtain coverage of, and adequate payment levels for, our product candidates from third-party payors, physicians may limit how much or under what circumstances they will prescribe or administer them and patients may decline to purchase them. This in turn could affect our ability to successfully commercialize our products and impact our profitability, results of operations, financial condition, and future success.

Healthcare legislation may make it more difficult to receive revenues, even if we have products that are approved.

In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory proposals in recent years to change the healthcare system in ways that could impact our ability to sell our products profitably. In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively, PPACA, became law in the United States. PPACA substantially changes the way healthcare is financed by both governmental and private insurers and significantly affects the healthcare industry. Among the provisions of PPACA of importance to our potential product candidates are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- a 2.3% medical device excise tax on certain transactions, including many U.S. sales of medical devices, which currently includes and we expect will continue to include U.S. sales of drug-device combination products;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program, retroactive to January 1, 2010, to 23% and 13% of the average manufacturer price for most branded and generic drugs, respectively;
- expansion of healthcare fraud and abuse laws, including the False Claims Act and the Anti-Kickback Statute, new government investigative powers, and enhanced penalties for noncompliance;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;

- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals beginning in 2014 and by adding new mandatory eligibility categories for certain individuals with income at or below 133% of the Federal Poverty Level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program;
- new requirements to report certain financial arrangements with physicians and teaching hospitals, as defined in PPACA and its implementing regulations, including reporting any "payments or transfers of value" made or distributed to prescribers, teaching hospitals and other healthcare providers and reporting any ownership and investment interests held by physicians and their immediate family members and applicable group purchasing organizations during the preceding calendar year, with reporting to the Centers for Medicare & Medicaid Services, or CMS, required by March 31, 2014 and by the 90th day of each subsequent calendar year;
- a new requirement to annually report drug samples that manufacturers and distributors provide to physicians; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

In addition, other legislative changes have been proposed and adopted since PPACA was enacted. On August 2, 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, starting in 2013. On January 2, 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, or the ATRA, which, among other things, 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. These new laws may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on our customers and accordingly, our financial operations.

We expect that PPACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved product, and could seriously harm our future revenues. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products.

If we fail to comply with federal and state healthcare laws, including fraud and abuse and health information privacy and security laws, we could face substantial penalties and our business, results of operations, financial condition and prospects could be adversely affected.

As a biopharmaceutical company, even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, certain federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights are and will be applicable to our business. We could be subject to healthcare fraud and abuse and patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which constrains our marketing practices, educational programs, pricing policies, and relationships with healthcare providers or other entities, by prohibiting, among other things,

soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, either the referral of an individual or the purchase or recommendation of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;

- federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created new federal criminal statutes that prohibit executing 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 of 2009, or HITECH, and its implementing regulations, which imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information; and
- state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers, and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of available statutory and regulatory exceptions, it is possible that some of our business activities could be subject to challenge under one or more of such laws. To the extent that any of our product candidates is ultimately sold in a foreign country, we may be subject to similar foreign laws and regulations. If we or our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, imprisonment, exclusion of products from reimbursement under U.S. federal or state healthcare programs, and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could materially adversely affect our ability to operate our business and our financial results. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

If product liability claims are brought against us, we may incur significant liabilities and suffer damage to our reputation.

The testing, manufacturing, marketing and sale of AFREZZA and our other product candidates expose us to potential product liability claims. A product liability claim may result in substantial judgments as well as consume significant financial and management resources and result in adverse publicity, decreased demand for a product, injury to our reputation, withdrawal of clinical studies volunteers and loss of revenues. We currently carry worldwide liability insurance in the amount of $10.0 million. In addition, we carry local policies per study in each country in which we conduct clinical studies that require us to carry coverage based on local statutory requirements. We intend to obtain product liability coverage for commercial sales in the future if AFREZZA is approved. However, we may not be able to obtain insurance coverage that will be adequate to satisfy any liability that may arise, and because insurance coverage in our industry can be very expensive and difficult to obtain, we cannot assure you that we will be able to obtain sufficient coverage at an acceptable cost, if at all. If losses from such claims exceed our liability insurance coverage, we may ourselves incur substantial liabilities. If we are required to pay a product liability claim our business and results of operations would be harmed and the market price of our common stock may decline.

If we lose any key employees or scientific advisors, our operations and our ability to execute our business strategy could be materially harmed.

We face intense competition for qualified employees among companies in the biotechnology and biopharmaceutical industries. Our success depends upon our ability to attract, retain and motivate highly skilled employees. We may be unable to attract and retain these individuals on acceptable terms, if at all. In addition, in order to commercialize our product candidates successfully, we may be required to expand our work force, particularly in the areas of manufacturing, and, if we are unable to enter into collaborations with third parties to commercialize AFREZZA or any other approved products, sales and marketing. These activities will require the addition of new personnel, including management, and the development of additional expertise by existing personnel, and we cannot assure you that we will be able to attract or retain any such new personnel on acceptable terms, if at all.

The loss of the services of any principal member of our management and scientific staff could significantly delay or prevent the achievement of our scientific and business objectives. All of our employees are "at will" and we currently do not have employment agreements with any of the principal members of our management or scientific staff, and we do not have key person life insurance to cover the loss of any of these individuals. Replacing key employees may be difficult and time-consuming because of the limited number of individuals in our industry with the skills and experience required to develop, gain regulatory approval of and commercialize our product candidates successfully.

We have relationships with scientific advisors at academic and other institutions to conduct research or assist us in formulating our research, development or clinical strategy. These scientific advisors are not our employees and may have commitments to, and other obligations with, other entities that may limit their availability to us. We have limited control over the activities of these scientific advisors and can generally expect these individuals to devote only limited time to our activities. Failure of any of these persons to devote sufficient time and resources to our programs could harm our business. In addition, these advisors are not prohibited from, and may have arrangements with, other companies to assist those companies in developing technologies that may compete with our product candidates.

If our Chairman and Chief Executive Officer is unable to devote sufficient time and attention to our business, our operations and our ability to execute our business strategy could be materially harmed.

Alfred Mann, our Chairman and Chief Executive Officer, is involved in many other business and charitable activities. As a result, the time and attention Mr. Mann devotes to the operation of our business varies, and he may not expend the same time or focus on our activities as other, similarly situated chief executive officers. If Mr. Mann is unable to devote the time and attention necessary to running our business, we may not be able to execute our business strategy and our business could be materially harmed.

If our internal controls over financial reporting are not considered effective, our business and stock price could be adversely affected.

Section 404 of the Sarbanes-Oxley Act of 2002 requires us to evaluate the effectiveness of our internal controls over financial reporting as of the end of each fiscal year, and to include a management report assessing the effectiveness of our internal controls over financial reporting in our annual report on Form 10-K for that fiscal year. Section 404 also requires our independent registered public accounting firm to attest to, and report on, our internal controls over financial reporting.

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our internal controls over financial reporting will prevent all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud involving a company have been, or will be, detected. The design of any system of controls

is based in part on certain assumptions about the likelihood of future events, and we cannot assure you that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected. We cannot assure you that we or our independent registered public accounting firm will not identify a material weakness in our internal controls in the future. A material weakness in our internal controls over financial reporting would require management and our independent registered public accounting firm to evaluate our internal controls as ineffective. If our internal controls over financial reporting are not considered effective, we may experience a loss of public confidence, which could have an adverse effect on our business and on the market price of our common stock.

Our operations might be interrupted by the occurrence of a natural disaster or other catastrophic event.

We expect that at least for the foreseeable future, our manufacturing facility in Danbury, Connecticut will be the sole location for the manufacturing of AFREZZA. This facility and the manufacturing equipment we use would be costly to replace and could require substantial lead time to repair or replace. In addition, we are headquartered in Valencia, California. This facility contains our principal executive offices and is used to provide support for the development of our AFREZZA programs. We depend on our facilities and on collaborators, contractors and vendors for the continued operation of our business, some of whom are located in Europe. Natural disasters or other catastrophic events, including interruptions in the supply of natural resources, political and governmental changes, severe weather conditions, wildfires and other fires, explosions, actions of animal rights activists, terrorist attacks, volcanic eruptions, earthquakes and wars could disrupt our operations or those of our collaborators, contractors and vendors. We might suffer losses as a result of business interruptions that exceed the coverage available under our and our contractors' insurance policies or for which we or our contractors do not have coverage. For example, we are not insured against a terrorist attack. Any natural disaster or catastrophic event could have a significant negative impact on our operations and financial results. Moreover, any such event could delay our research and development programs and adversely affect, which may include stopping, our readiness for commercial production.

We deal with hazardous materials and must comply with environmental laws and regulations, which can be expensive and restrict how we do business.

Our research and development work involves the controlled storage and use of hazardous materials, including chemical and biological materials. In addition, our manufacturing operations involve the use of a chemical that may form an explosive mixture under certain conditions. Our operations also produce hazardous waste products. We are subject to federal, state and local laws and regulations (i) governing how we use, manufacture, store, handle and dispose of these materials (ii) imposing liability for costs of cleaning up, and damages to natural resources from past spills, waste disposals on and off-site, or other releases of hazardous materials or regulated substances, and (iii) regulating workplace safety. Moreover, the risk of accidental contamination or injury from hazardous materials cannot be completely eliminated, and in the event of an accident, we could be held liable for any damages that may result, and any liability could fall outside the coverage or exceed the limits of our insurance. Currently, our general liability policy provides coverage up to $1.0 million per occurrence and $2.0 million in the aggregate and is supplemented by an umbrella policy that provides a further $4.0 million of coverage; however, our insurance policy excludes pollution liability coverage and we do not carry a separate hazardous materials policy. In addition, we could be required to incur significant costs to comply with environmental laws and regulations in the future. Finally, current or future environmental laws and regulations may impair our research, development or production efforts or have an adverse impact on our business, results of operations and financial condition.

When we purchased the facilities located in Danbury, Connecticut in 2001, a soil and groundwater investigation and remediation was being conducted by a former site operator (the responsible party) under the oversight of the Connecticut Department of Environmental Protection. During the construction of our expanded manufacturing facility, we excavated contaminated soil under the footprint of our building expansion location.

The responsible party reimbursed us for our increased excavation and disposal costs of contaminated soil in the amount of $1.625 million. It has conducted at its expense all work and will make all filings necessary to achieve closure for the environmental remediation conducted at the site, and has agreed to indemnify us for any future costs and expenses we may incur that are directly related to the final closure. If we are unable to collect these future costs and expenses, if any, from the responsible party, our business and results of operations may be harmed.

RISKS RELATED TO REGULATORY APPROVALS

Our product candidates must undergo costly and time-consuming rigorous nonclinical and clinical testing and we must obtain regulatory approval prior to the sale and marketing of any product. The results of this testing or issues that develop in the review and approval by a regulatory agency may subject us to unanticipated delays or prevent us from marketing any products.

Our research and development activities, as well as the manufacturing and marketing of our product candidates, including AFREZZA, are subject to regulation, including regulation for safety, efficacy and quality, by the FDA in the United States and comparable authorities in other countries. FDA regulations and the regulations of comparable foreign regulatory authorities are wide-ranging and govern, among other things:

- product design, development, manufacture and testing;
- product labeling;
- product storage and shipping;
- pre-market clearance or approval;
- advertising and promotion; and
- product sales and distribution.

Clinical testing can be costly and take many years, and the outcome is uncertain and susceptible to varying interpretations. We cannot be certain if or when the FDA might request additional studies, under what conditions such studies might be requested, or what the size or length of any such studies might be. The clinical studies of our product candidates may not be completed on schedule, the FDA or foreign regulatory agencies may order us to stop or modify our research, or these agencies may not ultimately approve any of our product candidates for commercial sale. The data collected from our clinical studies may not be sufficient to support regulatory approval of our various product candidates, including AFREZZA. Even if we believe the data collected from our clinical studies are sufficient, the FDA has substantial discretion in the approval process and may disagree with our interpretation of the data. Our failure to adequately demonstrate the safety and efficacy of any of our product candidates would delay or prevent regulatory approval of our product candidates, which could prevent us from achieving profitability.

The requirements governing the conduct of clinical studies and manufacturing and marketing of our product candidates, including AFREZZA, outside the United States vary widely from country to country. Foreign approvals may take longer to obtain than FDA approvals and can require, among other things, additional testing and different clinical study designs. Foreign regulatory approval processes include essentially all of the risks associated with the FDA approval processes. Some of those agencies also must approve prices of the products. Approval of a product by the FDA does not ensure approval of the same product by the health authorities of other countries. In addition, changes in regulatory policy in the United States or in foreign countries for product approval during the period of product development and regulatory agency review of each submitted new application may cause delays or rejections.

The process of obtaining FDA and other required regulatory approvals, including foreign approvals, is expensive, often takes many years and can vary substantially based upon the type, complexity and novelty of the products involved. We are not aware of any precedent for the successful commercialization of products based on our technology. In January 2006, the FDA approved the first pulmonary insulin product, Exubera. This approval

has had an impact on, and notwithstanding the voluntary withdrawal of the product from the market by its manufacturer could still impact, the development and registration of AFREZZA in different ways. For example, Exubera may be used as a reference for safety and efficacy evaluations of AFREZZA, and the approval standards set for Exubera may be applied to other inhaled insulin products that follow, including AFREZZA.

The FDA is regulating AFREZZA as a "combination product" because of the complex nature of the system that includes the combination of a new drug (AFREZZA) and a new medical device (the inhaler used to administer the insulin). The review of our NDA for AFREZZA involves several separate review groups of the FDA including: (1) the Metabolic and Endocrine Drug Products Division; (2) the Pulmonary Drug Products Division; and (3) the Center for Devices and Radiological Health, which reviews medical devices. The Metabolic and Endocrine Drug Products Division is the lead group and obtains consulting reviews from the other two FDA groups. We can make no assurances at this time about what impact FDA review by multiple groups will have on the approvability of our product or that we will obtain approval of the NDA in a timely manner or at all.

Also, questions that have been raised about the safety of marketed drugs generally, including pertaining to the lack of adequate labeling, may result in increased cautiousness by the FDA in reviewing new drugs based on safety, efficacy, or other regulatory considerations and may result in significant delays in obtaining regulatory approvals. Such regulatory considerations may also result in the imposition of more restrictive drug labeling or marketing requirements as conditions of approval, which may significantly affect the marketability of our drug products. FDA review of AFREZZA as a combination product may lengthen the product development and regulatory approval process, increase our development costs and delay or prevent the commercialization of AFREZZA. Other product candidates that we may develop could face similar obstacles and costs.

We have only limited experience in filing and pursuing applications necessary to gain regulatory approvals, which may impede our ability to obtain timely approvals from the FDA or foreign regulatory agencies, if at all.

We will not be able to commercialize AFREZZA or any other product candidates unless we have obtained regulatory approval. Until we prepared and submitted our NDA for AFREZZA, we had no experience as a company in late-stage regulatory filings, such as preparing and submitting NDAs, which may place us at risk of delays, overspending and human resources inefficiencies. Any delay in obtaining, or inability to obtain, regulatory approval could harm our business.

If we do not comply with regulatory requirements at any stage, whether before or after marketing approval is obtained, we may be subject to criminal prosecution, fined or forced to remove a product from the market or experience other adverse consequences, including restrictions or delays in obtaining regulatory marketing approval.

Even if we comply with regulatory requirements, we may not be able to obtain the labeling claims necessary or desirable for product promotion. We may also be required to undertake post-marketing studies. In addition, if we or other parties identify adverse effects after any of our products are on the market, or if manufacturing problems occur, regulatory approval may be withdrawn and a reformulation of our products, additional clinical studies, changes in labeling of, or indications of use for, our products and/or additional marketing applications may be required. If we encounter any of the foregoing problems, our business and results of operations will be harmed and the market price of our common stock may decline.

Even if we obtain regulatory approval for our product candidates, such approval may be limited and we will be subject to stringent, ongoing government regulation.

Even if regulatory authorities approve any of our product candidates, they could approve less than the full scope of uses or labeling that we seek or otherwise require special warnings or other restrictions on use or marketing or could require potentially costly post-marketing follow-up clinical studies. Regulatory authorities may limit the segments of the diabetes population to which we or others may market AFREZZA or limit the target population for our other product candidates. There are no assurances that any advantages of AFREZZA

will be agreed to by the FDA or otherwise included in product labeling or advertising and, as a result, AFREZZA may not have our expected competitive advantages when compared to other insulin products.

The manufacture, marketing and sale of any of our product candidates will be subject to stringent and ongoing government regulation. The FDA may also withdraw product approvals if problems concerning the safety or efficacy of a product appear following approval. We cannot be sure that FDA and United States Congressional initiatives or actions by foreign regulatory bodies pertaining to ensuring the safety of marketed drugs or other developments pertaining to the pharmaceutical industry will not adversely affect our operations.

We also are required to register our establishments and list our products with the FDA and certain state agencies. We and any third-party manufacturers or suppliers must continually adhere to federal regulations setting forth requirements, known as cGMP (for drugs) and QSR (for medical devices), and their foreign equivalents, which are enforced by the FDA and other national regulatory bodies through their facilities inspection programs. If our facilities, or the facilities of our manufacturers or suppliers, cannot pass a preapproval plant inspection, the FDA will not approve the marketing of our product candidates. In complying with cGMP and foreign regulatory requirements, we and any of our potential third-party manufacturers or suppliers will be obligated to expend time, money and effort in production, record-keeping and quality control to ensure that our products meet applicable specifications and other requirements. QSR requirements also impose extensive testing, control and documentation requirements. State regulatory agencies and the regulatory agencies of other countries have similar requirements. In addition, we will be required to comply with regulatory requirements of the FDA, state regulatory agencies and the regulatory agencies of other countries concerning the reporting of adverse events and device malfunctions, corrections and removals (e.g., recalls), promotion and advertising and general prohibitions against the manufacture and distribution of adulterated and misbranded devices. Failure to comply with these regulatory requirements could result in civil fines, product seizures, injunctions and/or criminal prosecution of responsible individuals and us. Any such actions would have a material adverse effect on our business and results of operations.

Our suppliers will be subject to FDA inspection before the agency approves an NDA for AFREZZA.

When we are required to find a new or additional supplier of insulin, we will be required to evaluate the new supplier's ability to provide insulin that meets regulatory requirements, including cGMP requirements as well as our specifications and quality requirements, which would require significant time and expense and could delay the manufacturing and future commercialization of AFREZZA. We also depend on suppliers for other materials that comprise AFREZZA, including our AFREZZA inhaler and cartridges. Each supplier must comply with relevant regulatory requirements including QSR, and is subject to inspection by the FDA. There can be no assurance, in the conduct of an inspection of any of our suppliers, that the agency would find that the supplier substantially complies with the QSR or cGMP requirements, where applicable. If we or any potential third-party manufacturer or supplier fails to comply with these requirements or comparable requirements in foreign countries, regulatory authorities may subject us to regulatory action, including criminal prosecutions, fines and suspension of the manufacture of our products.

Reports of side effects or safety concerns in related technology fields or in other companies' clinical studies could delay or prevent us from obtaining regulatory approval or negatively impact public perception of our product candidates.

At present, there are a number of clinical studies being conducted by us and other pharmaceutical companies involving insulin delivery systems. If we discover that AFREZZA is associated with a significantly increased frequency of adverse events, or if other pharmaceutical companies announce that they observed frequent adverse events in their studies involving insulin therapies, we could encounter delays in the timing of our clinical studies, difficulties in obtaining approval of AFREZZA or be subject to class warnings in the label for AFREZZA, if approved. In addition, the public perception of AFREZZA might be adversely affected, which could harm our business and results of operations and cause the market price of our common stock to decline, even if the concern relates to another company's products or product candidates.

There are also a number of clinical studies being conducted by other pharmaceutical companies involving compounds similar to, or competitive with, our other product candidates. Adverse results reported by these other companies in their clinical studies could delay or prevent us from obtaining regulatory approval or negatively impact public perception of our product candidates, which could harm our business and results of operations and cause the market price of our common stock to decline.

RISKS RELATED TO INTELLECTUAL PROPERTY

If we are unable to protect our proprietary rights, we may not be able to compete effectively, or operate profitably.

Our commercial success depends, in large part, on our ability to obtain and maintain intellectual property protection for our technology. Our ability to do so will depend on, among other things, complex legal and factual questions, and it should be noted that the standards regarding intellectual property rights in our fields are still evolving. We attempt to protect our proprietary technology through a combination of patents, trade secrets and confidentiality agreements. We own a number of domestic and international patents, have a number of domestic and international patent applications pending and have licenses to additional patents. We cannot assure you that our patents and licenses will successfully preclude others from using our technologies, and we could incur substantial costs in seeking enforcement of our proprietary rights against infringement. Even if issued, the patents may not give us an advantage over competitors with alternative technologies.

Moreover, the term of a patent is limited and, as a result, the patents protecting our products expire at various dates. For example, some patents providing protection for our AFREZZA inhalation powder expired in 2012. Other patents providing similar protection have terms extending into 2020, 2030 and 2031. In addition, patents providing protection for our inhaler and cartridges have terms extending into 2023, 2031 and 2032, and we have method of treatment claims that extend into 2026 and 2029. As and when these different patents expire, AFREZZA could become subject to increased competition. As a consequence, we may not be able to recover our development costs.

Moreover, the issuance of a patent is not conclusive as to its validity or enforceability and it is uncertain how much protection, if any, will be afforded by our patents. A third party may challenge the validity or enforceability of a patent after its issuance by various proceedings such as oppositions in foreign jurisdictions or re-examinations or other review in the United States. In some instances we may seek re-examination or reissuance of our own patents. If we attempt to enforce our patents, they may be challenged in court where they could be held invalid, unenforceable, or have their breadth narrowed to an extent that would destroy their value.

On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to United States patent law. These include provisions that affect the way patent applications will be prosecuted, subjected to post-grant challenge, and may also affect patent litigation. The United States Patent and Trademark Office, or USPTO is continuing to develop regulations and procedures to govern administration of the Leahy-Smith Act, and while all of the substantive changes to patent law associated with the Leahy-Smith Act have become effective, many changes have only recently become effective. Moreover there will be a transitional period of many years during which some applications may be eligible for prosecution under the previous rules. There are many ambiguities in this new law and how the courts will interpret it cannot be predicted with confidence. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

We also rely on unpatented technology, trade secrets, know-how and confidentiality agreements. We require our officers, employees, consultants and advisors to execute proprietary information and invention and assignment agreements upon commencement of their relationships with us. We also execute confidentiality agreements with outside collaborators. There can be no assurance, however, that these agreements will provide meaningful protection for our inventions, trade secrets, know-how or other proprietary information in the event

of unauthorized use or disclosure of such information. If any trade secret, know-how or other technology not protected by a patent were to be disclosed to or independently developed by a competitor, our business, results of operations and financial condition could be adversely affected.

If we become involved in lawsuits to protect or enforce our patents or the patents of our collaborators or licensors, we would be required to devote substantial time and resources to prosecute or defend such proceedings.

Competitors may infringe our patents or the patents of our collaborators or licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover its technology. A court may also decide to award us a royalty from an infringing party instead of issuing an injunction against the infringing activity. An adverse determination of 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 brought by the USPTO, may be necessary to determine the priority of inventions with respect to our patent applications or those of our collaborators or licensors. Additionally, the Leahy-Smith Act has greatly expanded the options for post-grant review of patents that can be brought by third parties. Litigation, post-grant review, or interference proceedings may fail and, even if successful, may result in substantial costs and be a distraction to our management. We may not be able, alone or with our collaborators and licensors, to prevent misappropriation of our proprietary rights, particularly in countries where the laws may not protect such rights as fully as in the United States. We may not prevail in any litigation, post-grant review, or interference proceeding in which we are involved. Even if we do prevail, these proceedings can be very expensive and distract our management.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, during the course of this kind of litigation, there could 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, the market price of our common stock may decline.

If our technologies conflict with the proprietary rights of others, we may incur substantial costs as a result of litigation or other proceedings and we could face substantial monetary damages and be precluded from commercializing our products, which would materially harm our business.

Biotechnology patents are numerous and may, at times, conflict with one another. As a result, it is not always clear to industry participants, including us, which patents cover the multitude of biotechnology product types. Ultimately, the courts must determine the scope of coverage afforded by a patent and the courts do not always arrive at uniform conclusions.

A patent owner may claim that we are making, using, selling or offering for sale an invention covered by the owner's patents and may go to court to stop us from engaging in such activities. Such litigation is not uncommon in our industry.

Patent lawsuits can be expensive and would consume time and other resources. There is a risk that a court would decide that we are infringing a third party's patents and would order us to stop the activities covered by the patents, including the commercialization of our products. In addition, there is a risk that we would have to pay the other party damages for having violated the other party's patents (which damages may be increased, as well as attorneys' fees ordered paid, if infringement is found to be willful), or that we will be required to obtain a license from the other party in order to continue to commercialize the affected products, or to design our products in a manner that does not infringe a valid patent. We may not prevail in any legal action, and a required license under the patent may not be available on acceptable terms or at all, requiring cessation of activities that were found to infringe a valid patent. We also may not be able to develop a non-infringing product design on commercially reasonable terms, or at all.

Moreover, certain components of AFREZZA may be manufactured outside the United States and imported into the United States. As such, third parties could file complaints under 19 U.S.C. Section 337(a)(1)(B), or a 337 action, with the International Trade Commission, or the ITC. A 337 action can be expensive and would consume time and other resources. There is a risk that the ITC would decide that we are infringing a third party's patents and either enjoin us from importing the infringing products or parts thereof into the United States or set a bond in an amount that the ITC considers would offset our competitive advantage from the continued importation during the statutory review period. The bond could be up to 100% of the value of the patented products. We may not prevail in any legal action, and a required license under the patent may not be available on acceptable terms, or at all, resulting in a permanent injunction preventing any further importation of the infringing products or parts thereof into the United States. We also may not be able to develop a non-infringing product design on commercially reasonable terms, or at all.

Although we own a number of domestic and foreign patents and patent applications relating to AFREZZA, we have identified certain third-party patents having claims relating to pulmonary insulin delivery that may trigger an allegation of infringement upon the commercial manufacture and sale of AFREZZA. If a court were to determine that AFREZZA was infringing any of these patent rights, we would have to establish with the court that these patents were invalid or unenforceable in order to avoid legal liability for infringement of these patents. However, proving patent invalidity or unenforceability can be difficult because issued patents are presumed valid. Therefore, in the event that we are unable to prevail in a non-infringement or invalidity action we will have to either acquire the third-party patents outright or seek a royalty-bearing license. Royalty-bearing licenses effectively increase production costs and therefore may materially affect product profitability. Furthermore, should the patent holder refuse to either assign or license us the infringed patents, it may be necessary to cease manufacturing the product entirely and/or design around the patents, if possible. In either event, our business would be harmed and our profitability could be materially adversely impacted.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, during the course of this kind of litigation, there could 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, the market price of our common stock may decline.

In addition, patent litigation may divert the attention of key personnel and we may not have sufficient resources to bring these actions to a successful conclusion. At the same time, some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. An adverse determination in a judicial or administrative proceeding or failure to obtain necessary licenses could prevent us from manufacturing and selling our products or result in substantial monetary damages, which would adversely affect our business and results of operations and cause the market price of our common stock to decline.

We may not obtain trademark registrations for our potential trade names.

We have not selected trade names for some of our product candidates; therefore, we have not filed trademark registrations for all of our potential trade names for our product candidates in all jurisdictions, nor can we assure that we will be granted registration of those potential trade names for which we have filed. No assurance can be given that any of our trademarks will be registered in the United States or elsewhere, or once registered that, prior to our being able to enter a particular market, they will not be cancelled for non-use. Nor can we give assurances, that the use of any of our trademarks will confer a competitive advantage in the marketplace.

Furthermore, even if we are successful in our trademark registrations, the FDA has its own process for drug nomenclature and its own views concerning appropriate proprietary names. It also has the power, even after granting market approval, to request a company to reconsider the name for a product because of evidence of confusion in the marketplace. We cannot assure you that the FDA or any other regulatory authority will approve of any of our trademarks or will not request reconsideration of one of our trademarks at some time in the future.

RISKS RELATED TO OUR COMMON STOCK

Our stock price is volatile.

The stock market, particularly in recent years, has experienced significant volatility particularly with respect to pharmaceutical and biotechnology stocks, and this trend may continue. The volatility of pharmaceutical and biotechnology stocks often does not relate to the operating performance of the companies represented by the stock. Our business and the market price of our common stock may be influenced by a large variety of factors, including:

- the progress and results of our clinical studies;
- general economic, political or stock market conditions;
- legislative developments;
- announcements by us or our competitors concerning clinical study results, acquisitions, strategic alliances, technological innovations, newly approved commercial products, product discontinuations, or other developments;
- the availability of critical materials used in developing and manufacturing AFREZZA or other product candidates;
- developments or disputes concerning our patents or proprietary rights;
- the expense and time associated with, and the extent of our ultimate success in, securing regulatory approvals;
- announcements by us concerning our financial condition or operating performance;
- changes in securities analysts' estimates of our financial condition or operating performance;
- general market conditions and fluctuations for emerging growth and pharmaceutical market sectors;
- sales of large blocks of our common stock, including sales by our executive officers, directors and significant stockholders;
- the status of any legal proceedings or regulatory matters against or involving us or any of our executive officers and directors;
- the existence of, and the issuance of shares of our common stock pursuant to, the share lending agreement and the short sales of our common stock effected in connection with the sale of our 2015 notes;
- the conversion of any of our 2015 notes or 2019 notes into shares of our common stock; and
- discussion of AFREZZA, our other product candidates, competitors' products, or our stock price by the financial and scientific press, the healthcare community and online investor communities such as chat rooms. In particular, it may be difficult to verify statements about us and our investigational products that appear on interactive websites that permit users to generate content anonymously or under a pseudonym and statements attributed to company officials may, in fact, have originated elsewhere.

Any of these risks, as well as other factors, could cause the market price of our common stock to decline.

If other biotechnology and biopharmaceutical companies or the securities markets in general encounter problems, the market price of our common stock could be adversely affected.

Public companies in general and companies included on the NASDAQ Global Market in particular have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. There has been particular volatility in the market prices of securities of biotechnology and other life sciences companies, and the market prices of these companies have often fluctuated because of problems or successes in a given market segment or because investor interest has shifted to

other segments. These broad market and industry factors may cause the market price of our common stock to decline, regardless of our operating performance. We have no control over this volatility and can only focus our efforts on our own operations, and even these may be affected due to the state of the capital markets.

In the past, following periods of large price declines in the public market price of a company's securities, securities class action litigation has often been initiated against that company. Litigation of this type could result in substantial costs and diversion of management's attention and resources, which would hurt our business. Any adverse determination in litigation could also subject us to significant liabilities.

Our Chairman and Chief Executive Officer and principal stockholder can individually control our direction and policies, and his interests may be adverse to the interests of our other stockholders. After his death, his stock will be left to his funding foundations for distribution to various charities, and we cannot assure you of the manner in which those entities will manage their holdings.

At February 17, 2014, our Chairman and Chief Executive Officer, Alfred E. Mann beneficially owned 40.6% of our outstanding shares of capital stock. By virtue of his holdings, Mr. Mann may be able to continue to effectively control the election of the members of our board of directors, our management and our affairs and prevent corporate transactions such as mergers, consolidations or the sale of all or substantially all of our assets that may be favorable from our standpoint or that of our other stockholders or cause a transaction that we or our other stockholders may view as unfavorable.

Subject to compliance with United States federal and state securities laws, Mr. Mann is free to sell the shares of our stock he holds at any time. Upon his death, we have been advised by Mr. Mann that his shares of our capital stock will be left to the Alfred E. Mann Medical Research Organization, or AEMMRO, and AEM Foundation for Biomedical Engineering, or AEMFBE, not-for-profit medical research foundations that serve as funding organizations for Mr. Mann's various charities, including the Alfred Mann Foundation, or AMF, and the Alfred Mann Institutes at the University of Southern California, the Technion-Israel Institute of Technology, and Purdue University, and that may serve as funding organizations for any other charities that he may establish. The AEMMRO is a membership foundation consisting of six members, including Mr. Mann, his wife, three of his children and Dr. Joseph Schulman, the chief scientist of the AEMFBE. The AEMFBE is a membership foundation consisting of five members, including Mr. Mann, his wife, and the same three of his children. Although we understand that the members of AEMMRO and AEMFBE have been advised of Mr. Mann's objectives for these foundations, once Mr. Mann's shares of our capital stock become the property of the foundations, we cannot assure you as to how those shares will be distributed or how they will be voted.

The future sale of our common stock, the conversion of our senior convertible notes into common stock or the exercise of our warrants for common stock could negatively affect our stock price.

As of February 17, 2014, we had 377,208,424 shares of common stock outstanding. Substantially all of these shares are available for public sale, subject in some cases to volume and other limitations or delivery of a prospectus. If our common stockholders sell substantial amounts of common stock in the public market, or the market perceives that such sales may occur, the market price of our common stock may decline. Likewise the issuance of additional shares of our common stock upon the conversion of some or all of our senior convertible notes, or upon the exercise of some or all of the warrants we issued in February 2012, could adversely affect the trading price of our common stock. In addition, the existence of these notes and warrants may encourage short selling of our common stock by market participants. Furthermore, if we were to include in a company-initiated registration statement shares held by our stockholders pursuant to the exercise of their registration rights, the sale of those shares could impair our ability to raise needed capital by depressing the price at which we could sell our common stock.

In addition, we will need to raise substantial additional capital in the future to fund our operations. If we raise additional funds by issuing equity securities, including through the ATM Agreements, or additional convertible debt, the market price of our common stock may decline and our existing stockholders may experience significant dilution.

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

We are incorporated in Delaware. Certain anti-takeover provisions under Delaware law and in our certificate of incorporation and amended and restated bylaws, as currently in effect, may make a change of control of our company more difficult, even if a change in control would be beneficial to our stockholders. Our anti-takeover provisions include provisions such as a prohibition on stockholder actions by written consent, the authority of our board of directors to issue preferred stock without stockholder approval, and supermajority voting requirements for specified actions. In addition, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibits stockholders owning 15% or more of our outstanding voting stock from merging or combining with us in certain circumstances. These provisions may delay or prevent an acquisition of us, even if the acquisition may be considered beneficial by some of our stockholders. In addition, they 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.

Because we do not expect to pay dividends in the foreseeable future, you must rely on stock appreciation for any return on your investment.

We have paid no cash dividends on any of our capital stock to date, and we currently intend to retain our future earnings, if any, to fund the development and growth of our business. As a result, we do not expect to pay any cash dividends in the foreseeable future, and payment of cash dividends, if any, will also depend on our financial condition, results of operations, capital requirements and other factors and will be at the discretion of our board of directors. Furthermore, we may in the future become subject to contractual restrictions on, or prohibitions against, the payment of dividends. Accordingly, the success of your investment in our common stock will likely depend entirely upon any future appreciation. There is no guarantee that our common stock will appreciate or maintain its current price. You could lose the entire value of your investment in our common stock.

Item 1B. *Unresolved Staff Comments*

None.

Item 2. *Properties*

In 2001, we acquired a facility in Danbury, Connecticut that included two buildings comprising approximately 190,000 square feet encompassing 17.5 acres. In September 2008, we completed the construction of approximately 140,000 square feet of new manufacturing space providing us with two buildings totaling approximately 328,000 square feet, housing our research and development, administrative and manufacturing functions, for AFREZZA, filling and packaging. We believe the Danbury facility will have sufficient space to satisfy potential commercial demand for the launch of AFREZZA and, with the expansion completed, the first few years thereafter for AFREZZA and other AFREZZA-related products.

We own and occupy approximately 142,000 square feet of laboratory, office and warehouse space in Valencia, California. The facility contains our principal executive offices and houses our research and development laboratories for our cancer and other programs. We also use this facility to provide support for the development of our AFREZZA programs.

Our obligations under the Facility Agreement and the Milestone Agreement are secured by certain mortgages on our facilities in Danbury, Connecticut and Valencia, California.

We lease approximately 23,000 square feet of office space in Paramus, New Jersey pursuant to a lease that expires in May 2014. The facility houses our medical, regulatory affairs, clinical operations and administrative staff.

Item 3. ***Legal Proceedings***

We are subject to legal proceedings and claims which arise in the ordinary course of our business. As of the date hereof, we believe that the final disposition of such matters will not have a material adverse effect on our financial position, results of operations or cash flows. We maintain liability insurance coverage to protect our assets from losses arising out of or involving activities associated with ongoing and normal business operations.

Item 4. ***Mine Safety Disclosures***

Not applicable.

PART II

Item 5. *Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities*

Common Stock Market Price

Our common stock has been traded on the NASDAQ Global Market under the symbol "MNKD" since July 28, 2004. The following table sets forth for the quarterly periods indicated, the high and low sales prices for our common stock as reported by the NASDAQ Global Market.

	High	Low
Year ended December 31, 2012		
First quarter	$ 3.48	$ 2.14
Second quarter	$ 2.49	$ 1.57
Third quarter	$ 3.11	$ 2.02
Fourth quarter	$ 2.91	$ 1.82
Year ended December 31, 2013		
First quarter	$ 3.67	$ 2.32
Second quarter	$ 8.06	$ 3.39
Third quarter	$ 8.70	$ 5.37
Fourth quarter	$ 5.84	$ 4.21

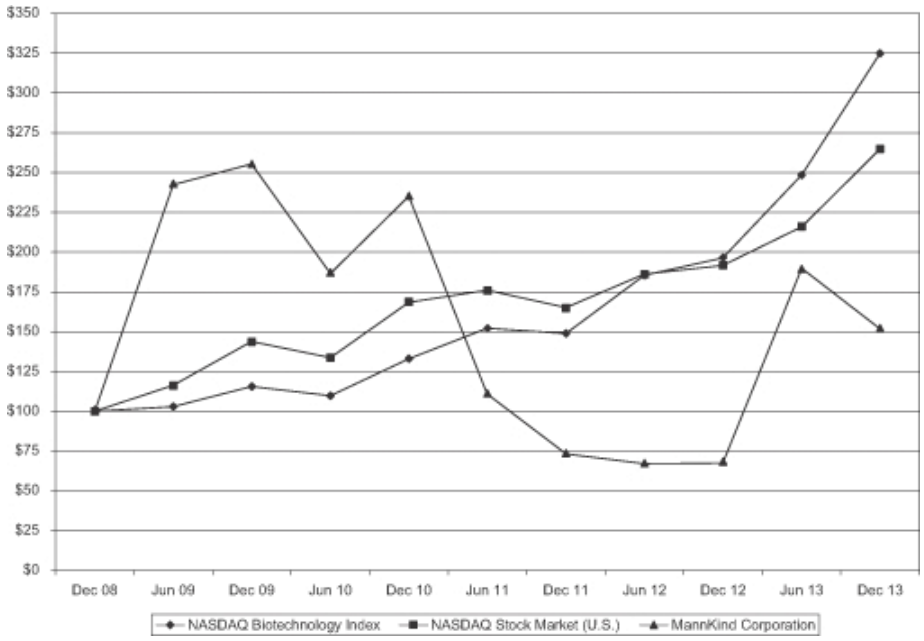
The closing sales price of our common stock on the NASDAQ Global Market was $5.58 on February 17, 2014 and there were 199 registered holders of record as of that date.

Performance Measurement Comparison

The material in this section is not "soliciting material," is not deemed "filed" with the SEC and shall not be incorporated by reference by any general statement incorporating by reference this Annual Report on Form 10-K into any of our filings under the Securities Act, or the Exchange Act, except to the extent we specifically incorporate this section by reference.

Performance Measurement Comparison

The following graph illustrates a comparison of the cumulative total stockholder return (change in stock price plus reinvested dividends) of our common stock with (i) the NASDAQ Composite Index and (ii) the NASDAQ Biotechnology Index. The comparisons in the graph are required by the SEC and are not intended to forecast or be indicative of possible future performance of our common stock.



Assumes a $100 investment, on December 31, 2008, in (i) our common stock, (ii) the securities comprising the NASDAQ Composite Index and (iii) the securities comprising the NASDAQ Biotechnology Index.

Dividend Policy

We have never declared or paid any cash dividends on our common stock. We currently intend to retain all available funds and any future earnings for use in the operation and expansion of our business. Accordingly, we do not anticipate paying any cash dividends on our common stock in the foreseeable future. Any future determination to pay dividends will be at the discretion of our board of directors. In addition, under the terms of the Facility Agreement, we are restricted from distributing any of our assets or declaring and distributing a dividend to our stockholders.

Item 6. *Selected Financial Data*

The following selected consolidated financial data should be read in conjunction with our consolidated financial statements and notes thereto and with "Management's Discussion and Analysis of Financial Condition and Results of Operations," which are included elsewhere in this Annual Report on Form 10-K. The selected financial data included in this section are not intended to replace our audited financial statements and the related notes included elsewhere in this annual report.

	Year Ended December 31,				
Statement of Operations Data:	**2009**	**2010**	**2011**	**2012**	**2013**
	(In thousands, except per share amounts)				
Revenue	$ —	$ 93	$ 50	$ 35	$ —
Operating expenses:					
Research and development	156,331	112,279	99,959	101,522	109,719
General and administrative	53,447	40,312	40,630	45,473	59,682
Total operating expenses	209,778	152,591	140,589	146,995	169,401
Loss from operations	(209,778)	(152,498)	(140,539)	(146,960)	(169,401)
Other income (expense)	51	(725)	1,541	(1,191)	(635)
Interest expense on note payable to principal stockholder	(5,679)	(10,249)	(10,883)	(10,491)	(6,309)
Interest expense on senior convertible notes	(4,768)	(7,128)	(10,941)	(11,139)	(15,153)
Interest income	70	40	18	7	8
Loss before provision for income taxes	(220,104)	(170,560)	(160,804)	(169,774)	(191,490)
Income taxes	—	—	—	408	—
Net loss applicable to common stockholders	$ (220,104)	$ (170,560)	$ (160,804)	$ (169,366)	$ (191,490)
Basic and diluted net loss per share	$ (2.07)	$ (1.50)	$ (1.32)	$ (.94)	$ (0.64)
Shares used to compute basic and diluted net loss per share	106,534	113,672	121,817	180,855	299,591

	December 31,				
Balance Sheet Data:	**2009**	**2010**	**2011**	**2012**	**2013**
	(In thousands)				
Cash and cash equivalents	$ 30,019	$ 66,061	$ 2,681	$ 61,840	$ 70,790
Total assets	247,397	277,256	199,553	251,314	258,646
Senior convertible notes	112,765	209,335	210,642	212,026	98,439
Facility financing obligation	—	—	—	—	102,300
Note payable to our principal stockholder	165,000	235,319	277,203	119,635	49,521
Deficit accumulated during the development stage	(1,604,182)	(1,774,742)	(1,935,546)	(2,104,912)	(2,296,402)
Total stockholders' equity (deficit)	(59,221)	(185,532)	(313,652)	(110,679)	(30,713)

Item 7. *Management's Discussion and Analysis of Financial Condition and Results of Operations*

The following discussion of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and notes thereto included in this Annual Report on Form 10-K.

OVERVIEW

We are a biopharmaceutical company focused on the discovery and development of therapeutic products for diseases such as diabetes. Our lead product candidate, AFREZZA, is an ultra rapid-acting insulin therapy that is intended to improve glycemic control in adults with type 1 or type 2 diabetes.

We are a development stage enterprise and have incurred significant losses since our inception in 1991. As of December 31, 2013, we have incurred a cumulative net loss of $2.3 billion and a stockholders' deficit of $30.7 million. We incurred net losses of approximately $160.8 million, $169.4 million and $191.5 million in the years ended December 31, 2011, 2012 and 2013, respectively. To date, we have not generated any product revenues and have funded our operations through the sale of equity securities and convertible debt securities, the Facility Agreement, and borrowings under a loan arrangement provided by our principal stockholder, or the Loan Arrangement. As discussed below in "Liquidity and Capital Resources," if we are unable to obtain additional funding in the future, there will continue to be substantial doubt about our ability to continue as a going concern.

We do not expect to record sales of any product prior to regulatory approval and commercialization of AFREZZA. We currently do not have the required approvals to market any of our product candidates, and we may not receive such approvals. We may not be able to achieve positive cash flow from operations even if we succeed in commercializing any of our product candidates. We expect to make substantial expenditures and to incur additional operating losses for at least the next several years as we:

- continue the clinical development of AFREZZA and new inhalation systems for the treatment of diabetes;
- seek regulatory approval to sell AFREZZA in the United States and other markets;
- seek development and commercialization collaborations for AFREZZA; and
- develop additional applications of our proprietary Technosphere formulation technology for the pulmonary delivery of other drugs.

Our business is subject to significant risks, including but not limited to the risks inherent in our ongoing clinical trials and the regulatory approval process, our potential inability to enter into sales and marketing collaborations or to commercialize AFREZZA in a timely manner. Additional significant risks also include the results of our research and development efforts, competition from other products and technologies and uncertainties associated with obtaining and enforcing patent rights.

RESEARCH AND DEVELOPMENT EXPENSES

Our research and development expenses consist mainly of costs associated with the clinical trials of our product candidates that have not yet received regulatory approval for marketing and for which no alternative future use has been identified. This includes the salaries, benefits and stock-based compensation of research and development personnel, raw materials, such as insulin purchases, laboratory supplies and materials, facility costs, costs for consultants and related contract research, licensing fees, and depreciation of equipment. We track research and development costs by the type of cost incurred. We partially offset research and development expenses with the recognition of estimated amounts receivable from the State of Connecticut pursuant to a program under which we can exchange qualified research and development income tax credits for cash.

Our research and development staff conducts our internal research and development activities, which include research, product development, clinical development, manufacturing and related activities. This staff is located in our facilities in Valencia, California; Paramus, New Jersey; and Danbury, Connecticut. We expense research and development costs as we incur them.

Clinical development timelines, likelihood of success and total costs vary widely. We are focused on advancing AFREZZA through regulatory filings.

At this time, due to the risks inherent in the clinical trial process and given the early stage of development of our product candidates other than AFREZZA, we are unable to estimate with any certainty the costs that we will incur in the continued development of our product candidates for commercialization. The costs required to complete the development of AFREZZA will be largely dependent on the cost and efficiency of our clinical trial operations and discussions with the FDA regarding its requirements.

During the first quarter of 2011, we implemented a restructuring to streamline operations, reduce operating expenses, extend our cash runway and focus our resources on securing FDA approval of the NDA for AFREZZA. In connection with the restructuring, we recorded charges to research and development expenses of

approximately $4.7 million for employee severance and other related termination benefits. The restructuring resulted in research and development operating cost savings of approximately $9.5 million in 2011. These savings were partially offset by increased costs associated with the additional trials required by the FDA.

GENERAL AND ADMINISTRATIVE EXPENSES

Our general and administrative expenses are driven by salaries, benefits and stock-based compensation for administrative, finance, business development, human resources, legal and information systems support personnel. In addition, general and administrative expenses include professional service fees and business insurance costs.

In connection with the restructuring, we recorded charges to general and administrative expenses of approximately $1.6 million for employee severance and other related termination benefits. The restructuring resulted in general and administrative operating cost savings of approximately $2.8 million in 2011. These savings were offset by increased professional fees.

CRITICAL ACCOUNTING POLICIES

We have based our discussion and analysis of our financial condition and results of operations on our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities and expenses. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making estimates of expenses such as stock option expenses and judgments about the carrying values of assets and liabilities. Actual results may differ from these estimates under different assumptions or conditions. The significant accounting policies that are critical to the judgments and estimates used in the preparation of our financial statements are described in more detail below.

Milestone Rights

In connection with the execution of the Facility Agreement on July 1, 2013, we issued Milestone Rights to the Milestone Purchasers. The Milestone Rights provide the Milestone Purchasers certain rights to receive payments up to $90.0 million upon the occurrence of specified strategic and sales milestones, including the first commercial sale of an AFREZZA product, and the achievement of specified net sales figures. We analyzed the Milestone Rights under the provisions of Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, 815 *Derivatives and Hedging*, referred to as ASC 815, and determined that the instruments do not meet the definition of a freestanding derivative. Since we have not elected to apply the fair value option to the Milestone Rights, we have recorded the Milestone Rights at their estimated fair value and accounted for the Milestone Rights as a liability by applying the indexed debt guidance contained in paragraphs ASC 470-10-25-3 and 35-4.

The initial fair value estimate of the Milestone Rights was calculated using the income approach in which the cash flows associated with the specified contractual payments were adjusted for both the expected timing and the probability of achieving the milestones and discounted to present value using a selected market discount rate. The expected timing and probability of achieving the milestones was developed with consideration given to both internal data, such as progress made to date and assessment of criteria required for achievement, and external data, such as market research studies. The discount rate was selected based on an estimation of required rate of returns for similar investment opportunities using available market data.

The Milestone Rights liability will be remeasured as the specified milestone events are achieved. Specifically, as each milestone event is achieved, the portion of the initially recorded Milestone Rights liability that pertains to such milestone event being achieved, will be remeasured to the amount of the specified related milestone payment. The resulting change in the balance of the Milestone Rights liability due to remeasurement will be recorded in our Statement of Operations as interest expense. Furthermore, the Milestone Rights liability will be

reduced upon each milestone payment being paid. As a result, each milestone payment would be effectively allocated between a reduction of the recorded Milestone Rights liability and an expense representing a return on a portion of the Milestone Rights liability paid to the investor for the achievement of the related milestone event.

Commitment Asset

In connection with the issuance of the first tranche of the 2019 notes and the Milestone Rights, we recorded a commitment asset, or the Commitment Asset, on July 1, 2013. The Commitment Asset represents the right to receive additional funding under future tranches of 2019 notes pursuant to the Facility Agreement. The initial value of the Commitment Asset was calculated using the income approach by estimating the fair value of the future tranches using a market debt rate commensurate with the risk of the future tranches and the fair value of the cash expected to be received by us and by assessing the probability of the commitments being funded in the future based on the operational hurdles required for funding being met. The Commitment Asset attributable to each future tranche of 2019 notes under the Facility Agreement is derecognized and recorded as a debt discount on the 2019 notes when issued. The debt discount is amortized using the effective interest rate method over the life of the 2019 notes. Prior to derecognition occurring, we monitor the Commitment Asset on an ongoing basis to determine whether an impairment indicator is present that would result in a full or partial write down of the Commitment Asset as a result of events that may lead to the subsequent tranches of 2019 notes not being issued. Based on the monitoring procedures performed through December 31, 2013, we did not identify any indicators of impairment.

Impairment of Long-Lived Assets

Assessing long-lived assets for impairment requires us to make assumptions and judgments regarding the carrying value of these assets. We evaluate long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. The assets are considered to be impaired if we determine that the carrying value may not be recoverable based upon our assessment of the following events or changes in circumstances:

- significant changes in our strategic business objectives and utilization of the assets;
- a determination that the carrying value of such assets cannot be recovered through undiscounted cash flows;
- loss of legal ownership or title to the assets;
- a significant adverse change in legal factors or in the business climate that could affect the value of a long-lived asset (asset group), including an adverse action or assessment by a regulator; or
- the impact of significant negative industry or economic trends.

If we believe our assets to be impaired, the impairment we recognize is the amount by which the carrying value of the assets exceeds the fair value of the assets. Any write-downs would be treated as permanent reductions in the carrying amount of the asset and an operating loss would be recognized. In addition, we base the useful lives and related amortization or depreciation expense on our estimate of the useful lives of the assets. If a change were to occur in any of the above-mentioned factors or estimates, our reported results could materially change.

To date, we have had recurring operating losses, and the recoverability of our long-lived assets is contingent upon executing our business plan. If we are unable to execute our business plan, we may be required to write down the value of our long-lived assets in future periods.

Clinical Trial Expenses

Our clinical trial accrual process seeks to account for expenses resulting from our obligations under contract with vendors, consultants, and clinical site agreements in connection with conducting clinical trials. The financial terms of these contracts are subject to negotiations which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided to us under such

contracts. Our objective is to reflect the appropriate trial expenses in our financial statements by matching period expenses with period services and efforts expended. We account for these expenses according to the progress of the trial as measured by patient progression and the timing of various aspects of the trial. We determine accrual estimates through discussions with internal clinical personnel and outside service providers as to the progress or state of completion of trials, or the services completed. Service provider status is then compared to the contractual obligated fee to be paid for such services. During the course of a clinical trial, we adjust our rate of clinical expense recognition if actual results differ from our estimates. In the event that we do not identify certain costs that have begun to be incurred or we underestimate or overestimate the level of services performed or the costs of such services, our reported expenses for a period would be too low or too high. The date on which certain services commence, the level of services performed on or before a given date and the cost of the services are often judgmental. We make these judgments based upon the facts and circumstances known to us in accordance with generally accepted accounting principles.

Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in our reporting amounts that are too high or too low for any particular period.

Stock-Based Compensation

We account for stock-based compensation in accordance with ASC 718 *Compensation- Stock Compensation*. ASC 718 requires all share-based payments to employees, including grants of stock options, restricted stock units, performance-based awards and the compensatory elements of employee stock purchase plans, to be recognized in the income statement based upon the fair value of the awards at the grant date. We use the Black-Scholes option valuation model to estimate the grant date fair value of employee stock options and the compensatory elements of employee stock purchase plans. Restricted stock units are valued based on the market price on the grant date. We evaluate stock awards with performance conditions as to the probability that the performance conditions will be met and estimate the date at which the performance conditions will be met in order to properly recognize stock-based compensation expense over the requisite service period. As of December 31, 2013, we had $107,108 and $3.7 million of unrecognized expenses related to performance-based options and restricted stock units, respectively, for milestones where achievement was not considered probable.

Forward Contracts

In February and October 2012, we entered into agreements with The Mann Group whereby we agreed to sell and The Mann Group agreed to purchase common stock and/or warrants. These agreements have been accounted for as forward contracts, having met the definition of derivative instruments in accordance with the provisions of ASC 815. We determine the fair value of the forward contract upon its issuance, record fair value adjustments of the forward contract to Other income (expense) during the reporting period and through the settlement of the forward contract, and reclassify the forward contract to equity upon settlement of the forward contract. The fair value of the forward purchase contract is highly sensitive to the discount applied for lack of marketability and the stock price, and changes in this discount and/or the stock price could cause the value of the forward purchase contract to change significantly.

Accounting for Income Taxes

We must make management judgments when determining our provision for income taxes, our deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets. At December 31, 2013, we have established a valuation allowance of $817.0 million against all of our net deferred tax asset balance, due to uncertainties related to the realizability of our deferred tax assets as a result of our history of operating losses. The valuation allowance is based on our estimates of taxable income by jurisdiction in which we operate and the period over which our deferred tax assets will be recoverable. In the event that actual results differ from these estimates or we adjust these estimates in future periods, we may need to change the valuation allowance, which could materially impact our financial position and results of operations.

RESULTS OF OPERATIONS

Years ended December 31, 2012 and 2013

Revenues

During the year ended December 31, 2012, we recognized $35,000 in revenue under a license agreement, and during the year ended December 31, 2013, we recognized no revenue. We do not anticipate sales of any product prior to regulatory approval and commercialization of AFREZZA.

Research and Development Expenses

The following table provides a comparison of the research and development expense categories for the years ended December 31, 2012 and 2013 (dollars in thousands):

	Year Ended December 31,			
	2012	2013	$ Change	% Change
Clinical	$ 47,936	$ 42,711	$(5,225)	(11)%
Manufacturing	40,094	40,530	436	1%
Research	7,614	6,351	(1,263)	(17)%
Research and development tax credit	(289)	(282)	7	(2)%
Stock-based compensation expense	6,167	20,409	14,242	231%
Research and development expenses	$101,522	$109,719	$ 8,197	8%

The increase in research and development expenses for the year ended December 31, 2013 compared to the year ended December 31, 2012, was driven by an increase in stock-based compensation expense of $14.2 million in connection with company-wide performance-based grants in the first and second quarters of 2013, as well as a full year of expense from grants in early 2012, and the achievement of predetermined milestones in the fourth quarter of 2013. This increase is offset by a decrease of $5.2 million in clinical study related expenses from the completion of two Phase 3 studies in the second quarter of 2013, and $1.3 million in reduced research expenses resulting from the positive effect of our cost cutting measures in addition to decreasing efforts in other non-AFREZZA related research as we focused on our primary objective of gaining approval of AFREZZA.

We anticipate that our overall research and development expenses will increase in 2014 compared to 2013 due to the preparation for commercialization of AFREZZA.

General and Administrative Expenses

The following table provides a comparison of the general and administrative expense categories for the years ended December 31, 2012 and 2013 (dollars in thousands):

	Year Ended December 31,			
	2012	2013	$ Change	% Change
Salaries, employee related and other general expenses	$ 38,348	$ 34,905	$ (3,443)	(9)%
Stock-based compensation expense	7,125	24,777	17,652	248%
General and administrative expenses	$45,473	$59,682	$ 14,209	31%

General and administrative expenses for the year ended December 31, 2013 increased as compared to the prior year driven by an increase in stock-based compensation expense of $17.7 million in connection with company-wide performance-based grants to all employees, in the first and second quarters of 2013, as well as a full year of expense from grants in early 2012, and the achievement of predetermined milestones in the fourth quarter of 2013. This increase was partially offset by a $4.2 million decrease in legal and professional fees.

We expect general and administrative expenses to be higher in 2014 as compared to 2013 due to increased stock compensation expense.

Other Income (Expense)

Other expense for the year ended December 31, 2013 was $0.6 million as compared to other expense of $1.2 million for the year ended December 31, 2012. In 2013, other expense reflects the loss on conversion of debt to equity at the end of 2013 related to the conversion by Deerfield in accordance with the Facility Agreement. In 2012, other expense reflects the adjustment in fair value of forward purchase contracts with our principal stockholder.

Interest Income and Expense

Interest expense for the year ended December 31, 2013 was relatively consistent compared to the year ended December 31, 2012, due to lower interest expense on our note payable to our principal stockholder in 2013 due to a lower carrying value being offset by higher interest expense associated with the 2019 notes issued in 2013.

Years ended December 31, 2011 and 2012

Revenues

During the years ended December 31, 2011 and December 31, 2012, we recognized $50,000 and $35,000, respectively, in revenue under a license agreement.

Research and Development Expenses

The following table provides a comparison of the research and development expense categories for the years ended December 31, 2011 and 2012 (dollars in thousands):

	Year Ended December 31,			
	2011	2012	$ Change	% Change
Clinical	$ 25,280	$ 47,936	$22,656	90%
Manufacturing	58,523	40,094	(18,429)	(31)%
Research	11,399	7,614	(3,785)	(33)%
Research and development tax credit	(609)	(289)	320	(53)%
Stock-based compensation expense	5,366	6,167	801	15%
Research and development expenses	$99,959	$101,522	$ 1,563	2%

The increase in research and development expenses for the year ended December 31, 2012 compared to the year ended December 31, 2011, was due to $24.9 million of increased clinical trial related expenses in connection with studies 171 and 175 conducted in 2012 and increased clinical distribution costs in support of our clinical trials, offset by the non-recurring $16.0 million expense recorded in 2011 related to our termination of the Supply Agreement with Organon and receipt of insulin, decreased salary related expenses of $8.6 million due to the February 2011 restructuring as well as the positive effect of our cost cutting measures on operating expenses.

In 2012, clinical trial related expenses increased $24.9 million in connection with studies 171 and 175 subsequent to completion of enrollment in the end of September and early October of 2012, partially offset by $2.1 million in salary related cost savings resulting from the February 2011 reduction in force. In 2012, manufacturing expenses decreased as no insulin purchases were made subsequent to the termination of the Supply Agreement in 2011. In 2011, we paid $16.0 million in connection with the settlement of the dispute arising from our termination of the Supply Agreement. Additionally, the February 2011 reduction in force resulted in $4.3 million in salary related manufacturing cost savings partially offset by increased clinical distribution costs in support of our clinical trials. Decreased salary related expenses of $2.2 million resulting from the February 2011 reduction in force and $0.9 million in reduced purchased services contributed to decreased research expenses in 2012.

General and Administrative Expenses

The following table provides a comparison of the general and administrative expense categories for the years ended December 31, 2011 and 2012 (dollars in thousands):

	Year Ended December 31,			
	2011	2012	$ Change	% Change
Salaries, employee related and other general expenses	$34,792	$38,348	$3,556	10%
Stock-based compensation expense	5,838	7,125	1,287	22%
General and administrative expenses	$40,630	$45,473	$4,843	12%

General and administrative expenses for the year ended December 31, 2012 increased as compared to the prior year due to a litigation settlement charge of $6.5 million, increased stock-based compensation expense of $1.3 million resulting from special awards issued to employees, partially offset by decreased salary related costs of $2.6 million as a result of the February 2011 reduction in force.

Other Income (Expense)

Other expense for the year ended December 31, 2012 was $1.2 million as compared to other income of $1.5 million for the year ended December 31, 2011. In 2012, other expense reflects the adjustment in fair value of forward purchase contracts with our principal stockholder. In 2011, other income is comprised of realized gains of $1.3 million on the termination of foreign exchange hedging contracts related to the Supply Agreement with Organon. We terminated these contracts in the first quarter of 2011.

Interest Income and Expense

Interest expense for the year ended December 31, 2012 increased compared to the year ended December 31, 2011, due to the interest expense associated with additional principal drawn down and capitalization of accrued interest to principal in 2012 under a loan arrangement with The Mann Group.

LIQUIDITY AND CAPITAL RESOURCES

We have funded our operations through the sale of equity securities and convertible debt securities and borrowings under a loan arrangement with The Mann Group.

In October 2007, we entered into a $350.0 million loan arrangement with our principal stockholder, or the Loan Arrangement. In February 2009, as a result of our principal stockholder being licensed as a finance lender under the California Finance Lenders Law, the promissory note underlying the Loan Arrangement was revised to reflect the lender as The Mann Group LLC, an entity controlled by our principal stockholder. Until January 1, 2013, interest on outstanding principal amounts accrued at a fixed rate equal to the one-year London Interbank Offered Rate (LIBOR) rate as reported by the *Wall Street Journal* on the date of such advance plus 3% per annum. Based on the amended terms of the agreement, the rate was fixed at 5.84% going forward. We amended the promissory note underlying the Loan Arrangement on October 31, 2013 to extend the maturity date to January 5, 2020 and extend the date through which we can borrow under the promissory note to December 31, 2019. We also increased the aggregate borrowing amount under the Loan Arrangement from $350.0 million to $370.0 million but provided that repayments or cancellations of principal under the Loan Arrangement will not be available for reborrowing.

As of December 31, 2013, the total principal amount outstanding under the Loan Arrangement was $49.5 million, and the amount available for future borrowings was $30.1 million. We anticipate using a portion of these available borrowings to capitalize into principal, upon mutual agreement of the parties, accrued interest as it becomes due and payable under the Loan Arrangement. Interest is due and payable quarterly in arrears on the first day of each calendar quarter for the preceding quarter, or at such other time as we and The Mann Group mutually agree. All or any portion of accrued and unpaid interest that becomes due and payable may be paid-in-kind and capitalized at any time upon mutual agreement of both parties. The Mann Group can require us to

prepay up to $200.0 million in advances that have been outstanding for at least 12 months (less approximately $105.0 million aggregate principal amount that was cancelled in connection with two common stock purchase agreements). If The Mann Group exercises its right to require prepayment, we will have 90 days after The Mann Group provides written notice (or the number of days to maturity of the note if less than 90 days) to prepay such advances. However, pursuant to a letter agreement entered into in August 2010, The Mann Group has agreed to not require us to prepay amounts outstanding under the amended and restated promissory note if the prepayment would require us to use our working capital resources. In addition, The Mann Group entered into a subordination agreement with Deerfield pursuant to which The Mann Group agreed with Deerfield not to demand or accept any payment under the Loan Arrangement until our payment obligations to Deerfield under the Facility Agreement have been satisfied in full. Subject to the foregoing, in the event of a default under our loan arrangement with The Mann Group, all unpaid principal and interest either becomes immediately due and payable or may be accelerated at The Mann Group's option, and the interest rate will increase to the one-year LIBOR rate calculated on the date of the initial advance or in effect on the date of default, whichever is greater, plus 5% per annum. All borrowings under the Loan Arrangement are unsecured. The Loan Arrangement contains no financial covenants. There are no warrants associated with the Loan Arrangement.

On March 18, 2013, we entered into at-the-market issuance sales agreements with two sales agents, under which we were permitted to issue and sell shares of our common stock having an aggregate offering price of up to $50.0 million under each sales agreement (provided that in no event were we permitted to issue and sell more than $50.0 million of shares of our common stock under both agreements in the aggregate) from time to time through either of the sales agents. As of December 31, 2013, we sold $48.9 million in common stock through these sales agreements, net of fees, and no further sales under these agreements will be made.

On July 1, 2013, we entered into the Facility Agreement with Deerfield, providing for the sale of up to $160.0 million of 2019 notes to Deerfield in four equal tranches of $40.0 million principal amount. In connection with the Facility Agreement, on July 1, 2013 we also issued the Milestone Rights to the Milestone Purchasers. The Milestone Rights provide Milestone Purchasers certain rights to receive payments of up to $90.0 million upon the occurrence of specified strategic and sales milestones including the first commercial sale of an AFREZZA product and the achievement of specified net sales figures.

On July 1, 2013, Deerfield purchased the first tranche of 2019 notes and the Milestone Rights for an aggregate of $40.0 million. The closing of the second tranche of 2019 notes, which was subject to achievement and reporting of certain results from our two Phase 3 clinical studies of AFREZZA, occurred on September 5, 2013. The closing of the third tranche of 2019 notes occurred in connection with the repayment of our 3.75% Senior Convertible notes due 2013, or the 2013 notes, on December 9, 2013. There can be no assurance that the conditions required for the purchase of the fourth tranche of 2019 notes will be met or met in a timeframe necessary to support our liquidity needs.

On February 28, 2014, we amended our existing facility agreement to provide for the issuance of tranche B notes to Deerfield in a maximum aggregate principal amount equal to (x) if the FDA approves the NDA for AFFREZZA and Deerfield purchases the fourth tranche of 2019 notes originally issuable pursuant to the Facility Agreement, 150% of the aggregate principal amount of 2019 notes that Deerfield has converted into our common stock on and after the effective date of the amendment, up to $90.0 million, and (y) otherwise, 33.33% of the aggregate principal amount of 2019 notes that Deerfield has converted into our common stock on and after the effective date of the amendment, up to $20.0 million, in each case subject to the satisfaction of certain other conditions. The amended Facility Agreement also provides that, subject to certain limitations, Deerfield may convert up to an additional $60.0 million of the 2019 notes issued and outstanding on the date of the amendment into shares of our common stock following the effective date of the amendment. There can be no assurance that the conditions required for the purchase of additional 2019 notes pursuant to the amendment will be met or met or met in a timeframe necessary to support our liquidity needs.

On March 3, 2014, we entered into the ATM Agreements, under which we may issue or sell shares of our common stock having an aggregate offering price of up to $50.0 million from time to time through MLV or Brinson Patrick, as our sales agents. We expect that all or substantially all sales of common stock made under the ATM Agreements will be made in "at the market" offerings as defined in Rule 415 of the Securities Act. We

have not yet sold or issued any shares of our common stock under the ATM Agreements. There can be no assurance that we will be able to access capital through the ATM Agreements on a timely basis, or at all.

During the year ended December 31, 2013, we used $128.7 million of cash for our operations and had a net loss of $191.5 million, which included $59.2 million of non-cash charges consisting of depreciation and accretion, and stock-based compensation. By comparison, during the year ended December 31, 2012, we used $119.9 million of cash for our operations and had a net loss of $169.4 million, which included $36.2 million of non-cash charges consisting of depreciation and accretion, stock-based compensation, fair value of forward purchase contracts and common stock issued pursuant to litigation settlement. The operating cash flow decreased by $10.6 million due to decreases in the following: accrued expenses associated with the clinical trials, accrued interest associated with our loan arrangement with The Mann Group due to the capitalization of the outstanding balance in October 2013, and accrued expenses related to equipment in 2013. As a result, cash used for operations for the year ended December 31, 2013 increased by $8.9 million compared to the prior year. We expect our negative operating cash flow to continue at least until we obtain regulatory approval and achieve commercialization of AFREZZA.

During the year ended December 31, 2013 we used $8.0 million of cash for investing activities, compared to $0.6 million of cash used for the year ended December 31, 2012. The increase of $7.4 million from prior year is due to the purchased $8.0 million of machinery and equipment to expand our manufacturing operations and our quality systems that support clinical trials for AFREZZA in the current year, as compared to $0.6 million of machinery and equipment purchased in 2012.

Our financing activities generated $145.7 million of cash for the year ended December 31, 2013, as compared to $179.6 million for the year ended December 31, 2012. For the year ended December 31, 2013, cash provided by financing activities was from $119.5 million in proceeds received from the issuance of the 2019 notes and the Milestone Rights and $94.2 million in net proceeds from the warrants exercised. Additionally, there were $48.9 million in net proceeds from use of our prior at-the-market issuance sales agreements. On December 15, 2013, we paid $115.0 million to repay the 2013 notes upon maturity. For the year ended December 31, 2012, cash from financing activities include $167.7 million in net proceeds from the sale of common stock during the first and fourth quarter and $12.8 million in borrowings from The Mann Group.

As of December 31, 2013, we had $70.8 million in cash and cash equivalents. We believe that our existing capital resources will enable us to continue planned operations at least into the third quarter of 2014. However, we cannot provide assurances that our plans will not change or that changed circumstances will not result in the depletion of the capital resources more rapidly than we currently anticipate. We will need to raise additional capital, whether through a sale of equity or debt securities, a strategic business collaboration with a pharmaceutical company, the establishment of other funding facilities, licensing arrangements, asset sales or other means, in order to continue the development and commercialization of AFREZZA and other product candidates and to support our other ongoing activities. However, we cannot provide assurances that such additional capital will be available whether through the sale of equity or debt securities, a strategic business collaboration with a pharmaceutical company, the establishment of other funding facilities, licensing arrangements, asset sales or other means.

We intend to use our capital resources to continue the development and commercialization of AFREZZA, if approved. We are expending a portion of our capital to scale up our manufacturing capabilities in our Danbury facilities. We also intend to use our capital resources for general corporate purposes.

We have held extensive discussions with a number of pharmaceutical companies concerning a potential strategic business collaboration for AFREZZA. We cannot predict when, if ever, we could conclude an agreement with a partner. There can be no assurance that any such collaboration will be available to us on a timely basis or on acceptable terms, if at all.

If we enter into a strategic business collaboration with a pharmaceutical or biotechnology company, we would expect, as part of the transaction, to receive additional capital. In addition, we expect to pursue the sale of equity and/or debt securities, including sales of our common stock through the ATM Agreements, or the establishment of other funding facilities. Issuances of debt or additional equity could impact the rights of our existing stockholders, dilute the ownership percentages of our existing stockholders and may impose restrictions on our

operations. These restrictions could include limitations on additional borrowing, specific restrictions on the use of our assets as well as prohibitions on our ability to create liens, pay dividends, redeem our stock or make investments. We also may seek to raise additional capital by pursuing opportunities for the licensing, sale or divestiture of certain intellectual property and other assets, including our Technosphere technology platform. There can be no assurance, however, that any strategic collaboration, sale of securities or sale or license of assets will be available to us on a timely basis or on acceptable terms, if at all. If we are unable to raise additional capital, we may be required to enter into agreements with third parties to develop or commercialize products or technologies that we otherwise would have sought to develop independently, and any such agreements may not be on terms as commercially favorable to us.

However, we cannot provide assurances that our plans will not change or that changed circumstances will not result in the depletion of our capital resources more rapidly than we currently anticipate. If planned operating results are not achieved or we are not successful in raising additional capital through equity or debt financing or entering a business collaboration, we may be required to reduce expenses through the delay, reduction or curtailment of our projects, including AFREZZA development activities, or further reduction of costs for facilities and administration, and there will continue to be substantial doubt about our ability to continue as a going concern.

Off-Balance Sheet Arrangements

As of December 31, 2013, we did not have any off-balance sheet arrangements.

COMMITMENTS AND CONTINGENCIES

Our contractual obligations represent future cash commitments and liabilities under agreements with third parties, and exclude contingent liabilities for which we cannot reasonably predict future payments. Accordingly, the table below excludes contractual obligations relating to milestone and royalty payments due to third parties, all of which are contingent upon certain future events. The expected timing of payment of the obligations presented (excluding payments in respect of the Milestone Rights) below are estimated based on current information. Future payments relate to operating lease obligations, the senior convertible notes, and open purchase order and supply commitments consisted of the following at December 31, 2013 (in thousands):

	Payments Due in				
Contractual Obligations	Less Than One Year	1-3 Years	3-5 Years	More Than 5 Years	Total
Open purchase order and supply commitments(1)	$23,991	$ 7,470	$ 600	$ —	$ 32,061
2015 notes(2)	5,750	103,610	—	—	109,360
Note payable to principal stockholder(3)	2,894	8,689	55,554	—	67,137
Facility financing obligation(4)	11,066	85,594	63,431	—	160,091
Operating lease obligations	326	73	—	—	399
Total contractual obligations	$ 44,027	$205,436	$119,585	$ —	$ 369,048

(1) The amounts included in open purchase order and supply commitments are subject to performance under the purchase order or contract by the supplier of the goods or services and do not become our obligation until such performance is rendered. The amount shown is principally for the purchase of materials for our clinical trials, the acquisition of manufacturing equipment, and commitments related to the expansion of our manufacturing plant.

(2) The amounts include future interest payments at fixed rates of 5.75% and payment of the notes in full upon maturity in 2015.

(3) The obligation for the note payable to the principal stockholder includes future principal and interest payments related to the $49.5 million of borrowings as of December 31, 2013. Interest is paid based on a fixed rate equal to the one-year LIBOR rate on December 31, 2013 plus 5% and the outstanding principal amount and all accrued interest thereon will be due on January 5, 2020.

(4) The facility financing obligation includes the first three tranches of the 2019 notes sold to Deerfield pursuant to the Facility Agreement, in an aggregate principal amount of $120.0 million, and future interest payments at fixed rates of 9.75% and required amortization payments of the 2019 notes as specified in the Facility Agreement. The calculation takes into account the conversion of $6.5 million of principal amount of 2019 notes into common stock in December 2013. In January 2014, an additional $33.5 million of principal was converted into common stock, consequently relieving us of that commitment and the interest associated with that portion of the 2019 notes.

RELATED PARTY TRANSACTIONS

For a description of our related party transactions see Note 6 — Related-Party Arrangements in the notes to our financial statements.

RECENT ACCOUNTING PRONOUNCEMENTS

In February 2013, the FASB issued ASU 2013-02, *Comprehensive Income (Topic 220) — Reporting of Amounts Reclassified out of Accumulated Other Comprehensive Income*. These amendments do not change the current requirements for reporting net income or other comprehensive income in the financial statements. These amendments provide for additional disclosure requirements for amounts reclassified out of accumulated other comprehensive income. These amendments are effective prospectively for interim and annual periods beginning after December 15, 2012. Early adoption is permitted. Effective January 1, 2013, we adopted the new requirements as set forth in ASU 2013-02 in the disclosure of comprehensive income on our consolidated financial statements. The adoption of the new requirements did not have a significant impact on our consolidated financial statements.

In July, 2013, the FASB ASU 2013-11, *Income Taxes (Topic 740): Presentation of an Unrecognized Tax Benefit when a Net Operating Loss Carryforward, a Similar Tax Loss, or a Tax Credit Carryforward Exists (a consensus of the FASB Emerging Issues Task Force)*. The amendments in this ASU provide guidance on the financial statements presentation of an unrecognized tax benefit when a net operating loss carryforward, a similar tax loss, or a tax credit carryforward exists. An unrecognized tax benefit should be presented in the financial statements as a reduction to a deferred tax asset for a net operating loss carryforward, a similar tax loss, or a tax credit carryforward with certain exceptions, in which case such an unrecognized tax benefit should be presented in the financial statements as a liability. The amendments in this ASU do not require new recurring disclosures. The amendments in this ASU are effective for fiscal years, and interim periods within those years, beginning after December 15, 2013. We are evaluating the impact, if any, of the adoption of ASU 2013-11 will have on our consolidated financial statements.

Item 7A. *Quantitative and Qualitative Disclosures About Market Risk*

We are exposed to market risk related to changes in interest rates impacting our short-term investment portfolio as well as the interest rate on the promissory note underlying our loan arrangement with The Mann Group. The interest rate on amounts borrowed under our loan arrangement with The Mann Group for the year ended December 31, 2013 was a fixed rate equal to 5.84%. As of December 31, 2013, the total principal amount outstanding under the Loan Arrangement was $49.5 million. We also have debt related to the 2015 notes at a fixed interest rate of 5.75% and debt related to the Facility Agreement at a fixed interest rate of 9.75%. Due to the fixed interest rates of our debt, we do not currently have any exposure to changes in our interest expense as a result of changes in interest rates. Our current policy requires us to maintain a highly liquid short-term investment portfolio consisting mainly of U.S. money market funds and investment-grade corporate, government and municipal debt. None of these investments are entered into for trading purposes. Our cash is deposited in and invested through highly rated financial institutions in North America. We continue to utilize our loan arrangement with The Mann Group to fund operations. As of December 31, 2013, the amount available for borrowing under our loan arrangement with The Mann Group was $30.1 million. If a 10% change in interest rates were to have occurred on December 31, 2013, this change would not have had a material effect on the value of our short-term investment portfolio or on our interest expense obligations with respect to outstanding borrowed amounts.

Item 8. ***Financial Statements and Supplementary Data***

The information required by this Item is included in Items 15(a)(1) and (2) of Part IV of this Annual Report on Form 10-K.

Item 9. ***Changes in and Disagreements With Accountants on Accounting and Financial Disclosure***

None.

Item 9A. ***Controls and Procedures***

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive and financial officers, evaluated the effectiveness of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, as of December 31, 2013. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to our management, including our principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2013, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective at a reasonable assurance level.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act as a process designed by, or under the supervision of, a company's principal executive and principal financial officers and effected by a company's board of directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP. Under the supervision and with the participation of our management, including our chief executive officer and chief financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework set forth in *Internal Control — Integrated Framework (1992)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under the framework set forth in *Internal Control — Integrated Framework (1992)*, our management concluded that our internal control over financial reporting was effective as of December 31, 2013. Deloitte & Touche LLP, the independent registered public accounting firm that audited the financial statements included in this 2013 Form 10-K, has issued an attestation report on our internal control over financial reporting as of December 31, 2013, which is included herein.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal controls over financial reporting during the quarter ended December 31, 2013 identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that have materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of MannKind Corporation
Valencia, California

We have audited the internal control over financial reporting of MannKind Corporation and subsidiaries (the "Company") as of December 31, 2013, based on criteria established in *Internal Control — Integrated Framework (1992)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit 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 effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed by, or under the supervision of, the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's board of directors, management, and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2013, based on the criteria established in *Internal Control — Integrated Framework* (1992) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements as of and for the year ended December 31, 2013 of the Company and our report dated March 3, 2014 expressed an unqualified opinion on those financial statements and includes an explanatory paragraph relating to the Company's ability to continue as a going concern.

/s/ DELOITTE & TOUCHE LLP

Los Angeles, California
March 3, 2014

Item 9B. ***Other Information.***

Deerfield Facility Amendment

On February 28, 2014, we entered into a First Amendment to Facility Agreement and Registration Rights Agreement with Deerfield to provide for the issuance pursuant to the Facility Agreement of tranche B notes to Deerfield in a maximum principal amount equal to (x) if the FDA approves the NDA for AFFREZZA and Deerfield purchased the fourth tranche of 2019 notes, 150% of the aggregate principal amount of the 2019 notes that Deerfield has converted into our common stock on and after the effective date of the amendment, up to $90.0 million, and (y) otherwise, 33.33% of the aggregate principal amount of the 2019 notes that Deerfield has converted into our common stock on and after the effective date of the amendment, up to $20.0 million, in each case subject to the satisfaction of certain other conditions. Any tranche B notes, if and when issued, would bear interest at the rate of 9.75% per year, subject to reduction to 8.75% if we enter into a collaboration with a third party to commercialize AFFREZZA, on the outstanding principal amount, payable in cash quarterly in arrears on the last business day of December, March, June and September of each year. We are required to repay 25% of the original principal amount of any tranche B notes on the third, fourth, fifth and sixth anniversaries of the applicable issue dates of such notes, provided that the entire outstanding principal amount of all tranche B notes will become due and payable no later than December 31, 2019. The tranche B notes will be prepayable without penalty or premium commencing two years after issuance thereof.

In addition, pursuant to the amendment, the outstanding 2019 notes held by Deerfield were amended and restated such that Deerfield may, subject to certain limitations, convert up to an additional $60.0 million principal amount under such 2019 notes into common stock after the effective date of the amendment. Pursuant to the amendment, we also amended our Registration Rights Agreement with Deerfield dated July 1, 2013 and agreed to register for resale up to 12,000,000 shares of common stock issuable upon conversion of the outstanding 2019 notes, as amended and restated, as of the date of the amendment, at a minimum conversion price of $5.00 per share unless we otherwise consent. The conversion price will be determined by the average of the volume weighted average prices per share during the three trading days immediately preceding the election to convert.

We relied on the exemption from registration contained in Section 4(a)(2) of the Securities Act and Regulation D, Rule 506 thereunder, in connection with the amendment and restatement of the 2019 notes as described above.

The foregoing description of the amendment is not complete and is qualified in its entirety by reference to the full text of the amendment, a copy of which is filed herewith as Exhibit 10.39 to this Annual Report on Form 10-K. The foregoing description of the amended and restated form of 2019 note is not complete and is qualified in its entirety by reference to the full text of the form of amended and restated 2019 note, a copy of which is filed herewith as Exhibit 4.7 to this Annual Report on Form 10-K.

At-The-Market Issuance Sales Agreements

On March 3, 2014, we entered into an At-The-Market Issuance Sales Agreement with MLV and an At-The-Market Issuance Sales Agreement with Brinson Patrick. We refer to the foregoing agreements as the “ATM Agreements.” Under each ATM Agreement, we may issue and sell shares of our common stock having an aggregate offering price of up to $50.0 million (provided that in no event may we issue and sell more than $50.0 million of our common stock under both agreements in the aggregate) from time to time through MLV or Brinson Patrick, as applicable, as our sales agent. We will issue and sell shares under only one ATM Agreement at any one time.

MLV and Brinson Patrick may each sell the common stock by any method that is deemed to be an “at-the-market” equity offering as defined in Rule 415 promulgated under the Securities Act, including sales made directly on or through The NASDAQ Global Market or to or through a market maker. MLV and Brinson Patrick may each also sell the common stock in negotiated transactions, subject to our approval. Subject to the terms and conditions of the respective ATM Agreements, MLV and Brinson Patrick will use commercially reasonable efforts consistent with their respective normal trading and sales practices and applicable laws, rules and regulations to sell our common stock from time to time, based upon our instructions (including any price, time or

size limits or other parameters or conditions we may impose). We are not obligated to make any sales of common stock under either of the ATM Agreements. The offering of shares of our common stock pursuant to either ATM Agreement will terminate upon the earlier of (1) the sale of all common stock subject to the applicable ATM Agreement, (2) March 3, 2017 and (3) termination of the applicable ATM Agreement. Each ATM Agreement may be terminated by us or by MLV or Brinson Patrick, as applicable, at any time upon 10 days' notice to the other party, or by MLV or Brinson Patrick, as applicable, at any time in certain circumstances, including but not limited to the occurrence of a material adverse change in us. We will pay MLV and Brinson Patrick a commission of up to 3.0% of the gross proceeds of the sales price per share of any common stock sold through MLV or Brinson Patrick, respectively, under their respective ATM Agreements. We have also provided MLV and Brinson Patrick with customary indemnification rights and reimbursement for up to $25,000 of legal expenses each.

The foregoing description of the ATM Agreements is not complete and is qualified in its entirety by reference to the full text of the agreements, copies of which are filed herewith as Exhibits 10.31 and 10.32 to this Annual Report on Form 10-K.

The foregoing description of the ATM Agreements shall not constitute an offer to sell or the solicitation of an offer to buy the securities discussed above in this Item 9B, nor shall there be any offer, solicitation or sale of the securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state

PART III

Certain information required by Part III is omitted from this Annual Report on Form 10-K, because we will file our Proxy Statement within 120 days after the end of our fiscal year ended December 31, 2013 pursuant to Regulations 14A for our 2014 Annual Meeting of Stockholders, and the information included in the Proxy Statement is incorporated herein by reference.

Item 10. *Directors, Executive Officers and Corporate Governance.*

(a) *Executive Officers* — For information regarding the identification and business experience of our executive officers, see "Executive Officers of the Registrant" in Part I, Item 1 of this Annual Report on Form 10-K.

(b) *Directors* — The information required by this Item regarding the identification and business experience of our directors and corporate governance matters is contained in the section entitled "Proposal 1- Election of Directors" and "Corporate Governance Principles and Board and Committee Matters" in the Proxy Statement, and is incorporated herein by reference.

Additional information required by this Item is incorporated herein by reference to the section entitled "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement.

We have adopted a Code of Business Conduct and Ethics Policy that applies to our directors and employees (including our principal executive officer, principal financial officer, principal accounting officer and controller), and have posted the text of the policy on our website (*www.mannkindcorp.com*) in connection with "Investors" materials. In addition, we intend to promptly disclose on our website (i) the nature of any amendment to the policy that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions and (ii) the nature of any waiver, including an implicit waiver, from a provision of the policy that is granted to one of these specified individuals, the name of such person who is granted the waiver and the date of the waiver, to the extent any such waiver is required to be disclosed pursuant to the rules and regulations of the SEC.

Item 11. *Executive Compensation*

The information under the caption "Executive Compensation," "Compensation of Directors," "Compensation Committee Interlocks and Insider Participation" and "Compensation Committee Report" in the Proxy Statement is incorporated herein by reference.

Item 12. ***Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters***

The information under the captions "Security Ownership of Certain Beneficial Owners and Management" and "Securities Authorized for Issuance under Equity Compensation Plans" in the Proxy Statement is incorporated herein by this reference.

Item 13. ***Certain Relationships, Related Transactions and Director Independence***

The information under the caption "Certain Transactions" and "Corporate Governance Principles and Board and Committee Matters" in the Proxy Statement is incorporated herein by reference.

Item 14. ***Principal Accounting Fees and Services***

The information under the caption "Principal Accounting Fees and Services" and "Pre-Approval Policies and Procedures" in the Proxy Statement is incorporated herein by reference.

With the exception of the information specifically incorporated by reference from the Proxy Statement in this Annual Report on Form 10-K, the Proxy Statement shall not be deemed to be filed as part of this report. Without limiting the foregoing, the information under the captions "Report of the Audit Committee of the Board of Directors" in the Proxy Statement is not incorporated by reference.

PART IV

Item 15. ***Exhibits, Financial Statement Schedules***

(a) The following documents are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

(1)(2) Financial Statements and Financial Statement Schedules. The following Financial Statements of MannKind Corporation, Financial Statement Schedules and Report of Independent Registered Public Accounting Firm are included in a separate section of this report beginning on page 67:

All financial statement schedules have been omitted because the required information is not applicable or not present in amounts sufficient to require submission of the schedule, or because the information required is included in the consolidated financial statements or the notes thereto.

(3) Exhibits. The exhibits listed under Item 15(b) hereof are filed or furnished with, or incorporated by reference into, this Annual Report on Form 10-K. Each management contract or compensatory plan or arrangement is identified separately in Item 15(b) hereof.

(b) Exhibits. The following exhibits are filed or furnished as part of, or incorporated by reference into, this Annual Report on Form 10-K:

Exhibit Index

Exhibit Number	Description of Document
3.1	Amended and Restated Certificate of Incorporation (incorporated by reference to MannKind's Registration Statement on Form S-1 (File No. 333-115020), originally filed with the SEC on April 30, 2004, as amended).
3.2	Certificate of Amendment of Amended and Restated Certificate of Incorporation (incorporated by reference to MannKind's Quarterly Report on Form 10-Q (File No. 000-50865), originally filed with the SEC on August 9, 2007).
3.3	Certificate of Amendment of Amended and Restated Certificate of Incorporation (incorporated by reference to MannKind's Quarterly report on Form 10-Q (File No. 000-50865), originally filed with the SEC on August 2, 2010).
3.4	Certificate of Amendment of Amended and Restated Certificate of Incorporation (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on July 1, 2013).
3.5	Amended and Restated Bylaws (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on November 19, 2007).
4.1	Form of common stock certificate (incorporated by reference to MannKind's Annual Report on Form 10-K (File No. 000-50865), originally filed with the SEC on March 18, 2013).
4.2	Registration Rights Agreement, dated October 15, 1998 by and among CTL Immuno Therapies Corp., Medical Research Group, LLC, McLean Watson Advisory Inc. and Alfred E. Mann, as amended (incorporated by reference to MannKind's Registration Statement on Form S-1 (File No. 333-115020), originally filed with the SEC on April 30, 2004, as amended).
4.3	Indenture, by and between MannKind and Wells Fargo Bank, N.A., dated August 24, 2010 (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on August 24, 2010).
4.4	Form of 5.75% Senior Convertible Note due 2015 (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on August 24, 2010).
4.5	Form of Warrant to Purchase Common Stock issued February 8, 2012 (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on February 6, 2012).
4.6	Form of 9.75% Senior Secured Convertible Promissory Note due 2019 (incorporated by reference to MannKind's current report on Form 8-K (File No. 000-50865), originally filed with the SEC on July 1, 2013).
4.7	Form of Amended and Restated 9.75% Senior Secured Convertible Promissory Note due 2019.
4.8	Milestone Rights Purchase Agreement, dated as of July 1, 2013, by and among MannKind, Deerfield Private Design Fund II, L.P. and Horizon Santé FLML SÁRL (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on July 1, 2013).
4.9	Guaranty and Security Agreement, dated as of July 1, 2013, by and among MannKind, MannKind LLC, Deerfield Private Design Fund II, L.P., Deerfield Private Design International II, L.P. and Horizon Santé FLML SÁRL (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on July 1, 2013).
4.10	Registration Rights Agreement, dated as of July 1, 2013, by and among MannKind, Deerfield Private Design Fund II, L.P. and Deerfield Private Design International II, L.P. (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on July 1, 2013).

Exhibit Number	Description of Document
4.11	Facility Agreement, dated as of July 1, 2013, by and among MannKind Corporation, Deerfield Private Design Fund II, L.P. and Deerfield Private Design International II, L.P (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on July 1, 2013).
4.12	First Amendment to Facility Agreement and Registration Rights Agreement, dated as of February 28, 2014, by and among MannKind, Deerfield Private Design Fund II, L.P. and Deerfield Private Design International II, L.P. (included as Exhibit 10.39).
5.1	Opinion of Cooley LLP.
10.1	Amended and Restated Promissory Note made by MannKind in favor of The Mann Group LLC, dated October 18, 2012 (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on October 19, 2012).
10.2	Agreement, dated September 13, 2006, between MannKind and Torcon, Inc. (incorporated by reference to MannKind's Quarterly Report on Form 10-Q (File No. 000-50865), originally filed with the SEC on August 9, 2007).
10.3	Securities Purchase Agreement, dated August 2, 2005 by and among MannKind and the purchasers listed on Exhibit A thereto (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on August 5, 2005).
10.4**	Supply Agreement, dated December 31, 2004, between MannKind and Vaupell, Inc. (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on February 23, 2005).
10.5*	Form of Indemnity Agreement entered into between MannKind and each of its directors and officers (incorporated by reference to MannKind's Registration Statement on Form S-1 (File No. 333-115020), originally filed with the SEC on April 30, 2004, as amended).
10.6*	Description of Officers' Incentive Program (incorporated by reference to MannKind's Annual Report on Form 10-K (File No. 000-50865), originally filed with the SEC on March 16, 2006).
10.7*	Executive Severance Agreement, dated October 10, 2007, between MannKind and Hakan Edstrom (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), as amended, filed with the SEC on October 17, 2007).
10.8*	Executive Severance Agreement, dated October 10, 2007, between MannKind and David Thomson (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), as amended, filed with the SEC on October 17, 2007).
10.9*	Executive Severance Agreement, dated October 10, 2007, between MannKind and Juergen Martens (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), as amended, filed with the SEC on October 17, 2007).
10.10*	Executive Severance Agreement, dated October 10, 2007, between MannKind and Diane Palumbo (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), as amended, filed with the SEC on October 17, 2007).
10.11*	Executive Severance Agreement, dated April 21, 2008, between MannKind and Matthew J. Pfeffer (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), as amended, filed with the SEC on October 17, 2007).
10.12*	Change of Control Agreement, dated October 10, 2007, between MannKind and Hakan Edstrom (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), as amended, filed with the SEC on October 17, 2007).

Exhibit Number	Description of Document
10.13*	Change of Control Agreement, dated October 10, 2007, between MannKind and David Thomson (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), as amended, filed with the SEC on October 17, 2007).
10.14*	Change of Control Agreement, dated October 10, 2007, between MannKind and Juergen Martens (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), as amended, filed with the SEC on October 17, 2007).
10.15*	Change of Control Agreement, dated October 10, 2007, between MannKind and Diane Palumbo (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), as amended, filed with the SEC on October 17, 2007).
10.16*	Change of Control Agreement, dated April 21, 2008, between MannKind and Matthew J. Pfeffer (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), as amended, filed with the SEC on October 17, 2007).
10.17*	2004 Equity Incentive Plan, as amended (incorporated by reference to MannKind's proxy statement on Schedule 14A (File No. 000-50865), originally filed with the SEC on April 6, 2012).
10.18*	Form of Stock Option Agreement under the 2004 Equity Incentive Plan (incorporated by reference to MannKind's Registration Statement on Form S-1 (File No. 333-115020), originally filed with the SEC on April 30, 2004, as amended).
10.19*	Form of Phantom Stock Award Agreement under the 2004 Equity Incentive Plan (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on December 14, 2005).
10.20*	2004 Non-Employee Directors' Stock Option Plan and form of stock option agreement there under (incorporated by reference to MannKind's Annual Report on Form 10-K (File No. 000-50865), originally filed with the SEC on March 16, 2006).
10.21*	2004 Employee Stock Purchase Plan and form of offering document there under (incorporated by reference to MannKind's Registration Statement on Form S-1 (File No. 333-115020), originally filed with the SEC on April 30, 2004, as amended).
10.22*	Pharmaceutical Discovery Corporation 1999 Stock Plan and form of stock option plan there under (incorporated by reference to MannKind's Registration Statement on Form S-1 (File No. 333-115020), originally filed with the SEC on April 30, 2004, as amended).
10.23*	AlleCure Corp. 2000 Stock Option and Stock Plan (incorporated by reference to MannKind's Registration Statement on Form S-1 (File No. 333-115020), originally filed with the SEC on April 30, 2004, as amended).
10.24*	CTL Immunotherapies Corp. 2000 Stock Option and Stock Plan (incorporated by reference to MannKind's Registration Statement on Form S-1 (File No. 333-115020), originally filed with the SEC on April 30, 2004, as amended).
10.25*	2001 Stock Awards Plan (incorporated by reference to MannKind's Registration Statement on Form S-1 (File No. 333-115020), originally filed with the SEC on April 30, 2004, as amended).
10.26**	Letter Agreement, dated June 4, 2011, between MannKind and N.V. Organon (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on July 1, 2013).
10.27**	Insulin Maintenance and Call-Option Agreement, dated June 19, 2009, by and among Pfizer Manufacturing Frankfurt GmbH, Pfizer Inc. and MannKind (incorporated by reference to MannKind's Quarterly Report on Form 10-Q (File No. 000-50865), originally filed with the SEC on May 4, 2009).

Exhibit Number	Description of Document
10.28	Purchase Agreement, dated August 18, 2010, by and between MannKind and Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representative for the initial purchasers named therein (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on August 24, 2010).
10.29	Share Lending Agreement, dated August 18, 2010, by and between MannKind and Bank of America, N.A. (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on August 24, 2010).
10.30	Letter Agreement, dated August 10, 2010, by and between MannKind and Omni Capital Corporation (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on August 11, 2010).
10.31	At-The-Market Issuance Sales Agreement, dated March 3, 2014, by and between MannKind and MLV & Co. LLC.
10.32	At-The-Market Issuance Sales Agreement, dated March 3, 2014, by and between MannKind and Meyers Associates, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P.).
10.33*	Acknowledgment and Agreement, dated as of October 31, 2013, by and between MannKind and The Mann Group LLC (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on November 4, 2013).
10.34*	Non-Employee Director Compensation Program (incorporated by reference to MannKind's Quarterly Report on Form 10-Q (File No. 000-50865), originally filed with the SEC on August 9, 2013).
10.35*	MannKind Corporation 2013 Equity Incentive Plan (incorporated by reference to MannKind's registration statement on Form S-8 (File No. 000-188790), originally filed with the SEC on May 23, 2013).
10.36*	Form of Stock Option Grant Notice, Stock Option Agreement and Notice of Exercise under the MannKind 2013 Equity Incentive Plan (incorporated by reference to MannKind's registration statement on Form S-8 (File No. 000-188790), originally filed with the SEC on May 23, 2013).
10.37*	Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under the MannKind 2013 Equity Incentive Plan (incorporated by reference to MannKind's registration statement on Form S-8 (File No. 000-188790), originally filed with the SEC on May 23, 2013).
10.38	Facility Agreement, dated as of July 1, 2013, by and among MannKind, Deerfield Private Design Fund II, L.P. and Deerfield Private Design International II, L.P. (incorporated by reference to MannKind's Current Report on Form 8-K (File No. 000-50865), originally filed with the SEC on July 1, 2013).
10.39	First Amendment to Facility Agreement and Registration Rights Agreement, dated as of February 28, 2014, by and among Mannkind, Deerfield Private Design Fund II, L.P., and Deerfield Private
23.1	Consent of Independent Registered Public Accounting Firm
23.2	Consent of Cooley LLP (included as Exhibit 5.1).
31.1	Certification of the Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.2	Certification of the Chief Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.

Exhibit Number	Description of Document
32	Certifications of the Chief Executive Officer and Chief Financial Officer pursuant to Rules 13a-14(b) and 15d-14(b) of the Securities Exchange Act of 1934, as amended and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350).
101	Interactive Data Files pursuant to Rule 405 of Regulation S-T.

* Indicates management contract or compensatory plan.

** Confidential treatment has been granted with respect to certain portions of this exhibit. Omitted portions have been filed separately with the SEC.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

MANNKIND CORPORATION

By: /s/ Alfred E. Mann
Alfred E. Mann
Chief Executive Officer

Dated: March 3, 2014

POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Hakan S. Edstrom, Matthew Pfeffer and David Thomson, and each of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place, and stead, in any and all capacities, to sign any and all amendments to this Report, and any other documents in connection therewith, and to file the same, with all exhibits thereto, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them or their or his substitute or substituted, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Alfred E. Mann Alfred E. Mann	Chief Executive Officer and Chairman of the Board of Directors *(Principal Executive Officer)*	March 3, 2014
/s/ Hakan S. Edstrom Hakan S. Edstrom	President, Chief Operating Officer and Director	March 3, 2014
/s/ Matthew J. Pfeffer Matthew J. Pfeffer	Corporate Vice President and Chief Financial Officer *(Principal Financial and Accounting Officer)*	March 3, 2014
/s/ Ronald J. Consiglio Ronald J. Consiglio	Director	March 3, 2014
/s/ Michael Friedman Michael Friedman, M.D.	Director	March 3, 2014
/s/ Kent Kresa Kent Kresa	Director	March 3, 2014
/s/ David H. MacCallum David H. MacCallum	Director	March 3, 2014
/s/ Henry L. Nordhoff Henry L. Nordhoff	Director	March 3, 2014

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)

INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of MannKind Corporation
Valencia, California

We have audited the accompanying consolidated balance sheets of MannKind Corporation and subsidiaries (a development stage company) (the "Company") as of December 31, 2012 and 2013 and the related consolidated statements of operations, comprehensive loss, stockholders' equity (deficit), and cash flows for each of the three years in the period ended December 31, 2013 and for the period from February 14, 1991 (date of inception) to December 31, 2013. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the 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. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of MannKind Corporation and subsidiaries as of December 31, 2012 and 2013, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2013 and for the period from February 14, 1991 (date of inception) to December 31, 2013, in conformity with accounting principles generally accepted in the United States of America.

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company's existing cash resources and its operating losses since inception raise substantial doubt about its ability to continue as a going concern. Management's plans concerning these matters are also described in Note 1 to the consolidated financial statements. The financial statements do not include any adjustments that might result from the outcome of these uncertainties.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2013, based on the criteria established in *Internal Control — Integrated Framework (1992)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 3, 2014 expressed an unqualified opinion on the Company's internal control over financial reporting.

/s/ DELOITTE & TOUCHE LLP

Los Angeles, California
March 3, 2014

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)
CONSOLIDATED BALANCE SHEETS

	December 31, 2012	December 31, 2013
	(In thousands, except share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 61,840	$ 70,790
State research and development credit exchange receivable — current	450	—
Prepaid expenses and other current assets	4,520	5,485
Total current assets	66,810	76,275
Property and equipment — net	183,961	176,557
State research and development credit exchange receivable — net of current portion	313	298
Other assets	230	5,516
Total	$ 251,314	$ 258,646
LIABILITIES AND STOCKHOLDERS' DEFICIT		
Current liabilities:		
Accounts payable	$ 4,555	$ 3,860
Accrued expenses and other current liabilities	25,777	21,634
Facility financing obligation	—	102,300
Senior convertible notes	114,443	—
Total current liabilities	144,775	127,794
Senior convertible notes	97,583	98,439
Note payable to principal stockholder	119,635	49,521
Other liabilities	—	13,605
Total liabilities	361,993	289,359
Commitments and contingencies		
Stockholders' deficit:		
Undesignated preferred stock, $0.01 par value — 10,000,000 shares authorized; no shares issued or outstanding at December 31, 2012 and 2013	—	—
Common stock, $0.01 par value — 550,000,000 shares authorized at December 31, 2012 and 2013, respectively; 286,035,082 and 369,391,972 shares issued and outstanding at December 31, 2012 and 2013, respectively	2,860	3,697
Additional paid-in capital	1,991,379	2,261,996
Accumulated other comprehensive income (loss)	(6)	(4)
Deficit accumulated during the development stage	(2,104,912)	(2,296,402)
Total stockholders' deficit	(110,679)	(30,713)
Total	$ 251,314	$ 258,646

See notes to consolidated financial statements.

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,			Cumulative Period from February 14, 1991 (Date of Inception) to December 31, 2013
	2011	2012	2013	
	(In thousands, except per share data)			
Revenue	$ 50	$ 35	$ —	$ 3,166
Operating expenses:				
Research and development	99,959	101,522	109,719	1,577,292
General and administrative	40,630	45,473	59,682	485,386
In-process research and development costs	—	—	—	19,726
Goodwill impairment	—	—	—	151,428
Total operating expenses	140,589	146,995	169,401	2,233,832
Loss from operations	(140,539)	(146,960)	(169,401)	(2,230,666)
Other income (expense)	1,541	(1,191)	(635)	(2,902)
Interest expense on note payable to principal stockholder	(10,883)	(10,491)	(6,309)	(45,134)
Interest expense on notes	(10,941)	(11,139)	(15,153)	(55,086)
Interest income	18	7	8	37,004
Loss before benefit for income taxes	(160,804)	(169,774)	(191,490)	(2,296,784)
Income tax benefit	—	408	—	382
Net loss	(160,804)	(169,366)	(191,490)	(2,296,402)
Deemed dividend related to beneficial conversion feature of convertible preferred stock	—	—	—	(22,260)
Accretion on redeemable preferred stock	—	—	—	(952)
Net loss applicable to common stockholders	$ (160,804)	$ (169,366)	$ (191,490)	$ (2,319,614)
Net loss per share applicable to common stockholders — basic and diluted	$ (1.32)	$ (0.94)	$ (0.64)	
Shares used to compute basic and diluted net loss per share applicable to common stockholders	121,817	180,855	299,591	

See notes to consolidated financial statements.

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

	Year ended December 31,			Cumulative Period from February 14, 1991 (Date of Inception) to December 31, 2013
	2011	2012	2013	
	(In thousands)			
Net Loss	$(160,804)	$(169,366)	$(191,490)	$(2,296,402)
Other comprehensive loss:				
Cumulative translation (loss) gain	(3)	(2)	2	(4)
Unrealized gain (loss) on investments:				
Unrealized holding gain (loss) during the period	(27)	—	—	48
Less: reclassification adjustment for gains (losses) included in net loss	—	(48)	—	(48)
Net unrealized gain (loss) on investments	(27)	(48)	—	—
Other comprehensive loss	(30)	(50)	2	(4)
Comprehensive loss	$(160,834)	$(169,416)	$(191,488)	$(2,296,406)

See notes to consolidated financial statements.

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)

(In thousands)	Series B Convertible Preferred Stock		Series C Convertible Preferred Stock		Series C Convertible Preferred Stock Issuable	Series C Convertible Preferred Stock Subscriptions Receivable	Common Stock		Additional Paid-In Capital	Notes Receivable from Stockholders	Notes Receivable from Officers	Other Comprehensive Income (Loss)	Deficit Accumulated During the Development Stage	Total
	Shares	Amount	Shares	Amount			Shares	Amount						
Issuance of common stock for cash	—	$ —	—	$ —	$ —	$ —	998	$ 10	$ 890	$ —	$ —	$ —	$ —	$ 900
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(911)	(911)
BALANCE, FEBRUARY 29, 1992	—	—	—	—	—	—	998	10	890	—	—	—	(911)	(11)
Issuance of common stock for cash and services	—	—	—	—	—	—	73	1	887	—	—	—	—	888
Capital contribution	—	—	—	—	—	—	—	—	20	—	—	—	—	20
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(1,175)	(1,175)
BALANCE, FEBRUARY 28, 1993	—	—	—	—	—	—	1,071	11	1,797	—	—	—	(2,086)	(278)
Issuance of common stock for cash	—	—	—	—	—	—	11	—	526	—	—	—	—	526
Issuance of stock for notes receivable	—	—	—	—	—	—	8	—	400	(400)	—	—	—	—
Net loss	—	—	—	—	—	—		—	—	—	—	—	(1,156)	(1,156)
BALANCE, FEBRUARY 28, 1994	—	—	—	—	—	—	1,090	11	2,723	(400)	—	—	(3,242)	(908)
Issuance of common stock for cash and services	—	—	—	—	—	—	36	—	1,805	—	—	—	—	1,805
Collection of stock subscription	—	—	—	—	—	—	—	—	—	400	—	—	—	400
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(2,004)	(2,004)
BALANCE, DECEMBER 31, 1994	—	—	—	—	—	—	1,126	11	4,528	—	—	—	(5,246)	(707)
Issuance of common stock for services	—	—	—	—	—	—	—	—	8	—	—	—	—	8
Exercise of stock options	—	—	—	—	—	—	1	—	22	—	—	—	—	22
Stock compensation	—	—	—	—	—	—	—	—	384	—	—	—	—	384
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(2,815)	(2,815)
BALANCE, DECEMBER 31, 1995	—	—	—	—	—	—	1,127	11	4,942	—	—	—	(8,061)	(3,108)
Issuance of common stock for cash and services	—	—	—	—	—	—	1	—	59	—	—	—	—	59
Exercise of stock options	—	—	—	—	—	—	3	—	12	—	—	—	—	12
Stock compensation	—	—	—	—	—	—	—	—	126	—	—	—	—	126
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(2,570)	(2,570)
BALANCE, DECEMBER 31, 1996	—	—	—	—	—	—	1,131	11	5,139	—	—	—	(10,631)	(5,481)
Issuance of common stock for cash and services	—	—	—	—	—	—	548	6	190	—	—	—	—	196
Stock compensation	—	—	—	—	—	—	—	—	2	—	—	—	—	2
Exercise of stock options	—	—	—	—	—	—	27	—	135	—	—	—	—	135
Conversion of notes payable	—	—	—	—	—	—	12	—	60	—	—	—	—	60
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(2,280)	(2,280)
BALANCE, DECEMBER 31, 1997	—	—	—	—	—	—	1,718	17	5,526	—	—	—	(12,911)	(7,368)
Issuance of common stock for cash and services	—	—	—	—	—	—	2,253	23	12,703	—	—	—	—	12,726
Stock compensation	—	—	—	—	—	—	—	—	150	—	—	—	—	150
Exercise of stock options	—	—	—	—	—	—	68	1	24	—	—	—	—	25
Conversion of notes payable	—	—	—	—	—	—	215	2	1,200	—	—	—	—	1,202
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(3,331)	(3,331)
BALANCE, DECEMBER 31, 1998	—	—	—	—	—	—	4,254	43	19,603	—	—	—	(16,242)	3,404
Issuance of common stock	—	—	—	—	—	—	162	2	532	—	—	—	—	534
Conversion of notes payable	—	—	—	—	—	—	80	1	994	—	—	—	—	995
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(5,679)	(5,679)
BALANCE, DECEMBER 31, 1999	—	—	—	—	—	—	4,496	46	21,129	—	—	—	(21,921)	(746)

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT) — (Continued)

(In thousands)	Series B Convertible Preferred Stock		Series C Convertible Preferred Stock		Series C Convertible Preferred Stock Issuable	Series C Convertible Preferred Stock Subscriptions Receivable	Common Stock		Additional Paid-In Capital	Notes Receivable from Stockholders	Notes Receivable from Officers	Other Comprehensive Income (Loss)	Deficit Accumulated During the Development Stage	Total
	Shares	Amount	Shares	Amount			Shares	Amount						
Conversion of notes payable	—	—	—	—	—	—	63	1	1,073	—	—	—	—	1,074
Issuance of Series B preferred stock for cash	193	15,000	—	—	—	—	—	—	—	—	—	—	—	15,000
Issuance of common stock for cash, services and notes	—	—	—	—	—	—	4,690	46	33,945	(2,358)	—	—	—	31,633
Discount on notes below market rate	—	—	—	—	—	—	—	—	—	241	—	—	—	241
Accrued interest on notes	—	—	—	—	—	—	—	—	—	(117)	—	—	—	(117)
Purchase of Series A redeemable convertible preferred stock	—	—	—	—	—	—	—	—	(993)	—	—	—	—	(993)
Amount in excess of redemption obligation	—	—	—	—	—	—	—	—	999	—	—	—	—	999
Accretion to redemption value on Series A redeemable convertible preferred stock	—	—	—	—	—	—	—	—	(149)	—	—	—	—	(149)
Stock-based compensation	—	—	—	—	—	—	—	—	9,609	—	—	—	—	9,609
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(24,661)	(24,661)
BALANCE, DECEMBER 31, 2000	193	15,000	—	—	—	—	9,249	93	65,613	(2,234)	—	—	(46,582)	31,890
Issuance of common stock for cash	—	—	—	—	—	—	3,052	30	78,000	—	—	—	—	78,030
Cash received for common stock to be issued	—	—	—	—	—	—	—	—	3,900	—	—	—	—	3,900
Issuance of common stock for services	—	—	—	—	—	—	3	—	60	—	—	—	—	60
Exercise of stock options	—	—	—	—	—	—	1	—	13	—	—	—	—	13
Accrued interest on notes	—	—	—	—	—	—	—	—	—	(189)	—	—	—	(189)
Payments on notes receivable	—	—	—	—	—	—	—	—	—	28	—	—	—	28
Accretion to redemption value on Series A redeemable convertible preferred stock	—	—	—	—	—	—	—	—	(239)	—	—	—	—	(239)
Stock-based compensation	—	—	—	—	—	—	—	—	1,565	—	—	—	—	1,565
Issuance of put option by stockholder	—	—	—	—	—	—	—	—	(2,949)	—	—	—	—	(2,949)
Record merger of entities	—	—	—	—	—	—	—	—	171,154	—	—	—	—	171,154
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(48,245)	(48,245)
BALANCE, DECEMBER 31, 2001	193	15,000	—	—	—	—	12,305	123	317,117	(2,395)	—	—	(94,827)	235,018
Issuance of common stock for cash	—	—	—	—	—	—	3,922	40	58,775	—	—	—	—	58,815
Issuance of common stock for cash already received	—	—	—	—	—	—	234	2	(2)	—	—	—	—	—
Issuance of stock award to employee	—	—	—	—	—	—	3	—	84	—	—	—	—	84
Cash received for common stock issuable	—	—	—	—	—	—	—	—	98	—	—	—	—	98
Accrued interest on notes	—	—	—	—	—	—	—	—	—	(229)	—	—	—	(229)
Payments on notes receivable	—	—	—	—	—	—	—	—	—	1,314	—	—	—	1,314
Beneficial conversion feature of Series B convertible preferred stock	—	—	—	—	—	—	—	—	1,421	—	—	—	—	1,421
Deemed dividend related to beneficial conversion feature of Series B convertible preferred stock	—	—	—	—	—	—	—	—	(1,421)	—	—	—	—	(1,421)
Accretion to redemption value on Series A redeemable convertible preferred stock	—	—	—	—	—	—	—	—	(251)	—	—	—	—	(251)
Stock-based compensation	—	—	—	—	—	—	—	—	268	—	—	—	—	268
Put option redemption by stockholder	—	—	—	—	—	—	—	—	1,921	—	—	—	—	1,921
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(206,265)	(206,265)
BALANCE, DECEMBER 31, 2002	193	15,000	—	—	—	—	16,464	165	378,010	(1,310)	—	—	(301,092)	90,773

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT) — (Continued)

(In thousands)	Series B Convertible Preferred Stock		Series C Convertible Preferred Stock		Series C Convertible Preferred Stock Issuable	Series C Convertible Preferred Stock Subscriptions Receivable	Common Stock		Additional Paid-In Capital	Notes Receivable from Stockholders	Notes Receivable from Officers	Other Comprehensive Income (Loss)	Deficit Accumulated During the Development Stage	Total
	Shares	Amount	Shares	Amount			Shares	Amount						
Issuance of Series C convertible preferred stock subscriptions	—	—	—	—	50,000	(50,000)	—	—	—	—	—	—	—	—
Cash collected on Series C convertible preferred stock subscriptions	—	—	—	—	—	31,847	—	—	—	—	—	—	—	31,847
Issuance of common stock for cash	—	—	—	—	—	—	3,494	35	49,965	—	—	—	—	50,000
Non-cash compensation expense of officer resulting from stockholder contribution	—	—	—	—	—	—	—	—	70	—	—	—	—	70
Issuance of common stock for cash already received	—	—	—	—	—	—	17	—	—	—	—	—	—	—
Notes receivable by stockholder issued to officers			—	—	—	—	—	—	225	—	(225)	—	—	—
Accrued interest on notes	—	—	—	—	—	—	—	—	—	(102)	(3)	—	—	(105)
Beneficial conversion feature of Series B convertible preferred stock	—	—	—	—	—	—	—	—	1,017	—	—	—	—	1,017
Deemed dividend related to beneficial conversion feature of Series B convertible preferred stock	—	—	—	—	—	—	—	—	(1,017)	—	—	—	—	(1,017)
Accretion to redemption value on Series A redeemable convertible preferred stock	—	—	—	—	—	—	—	—	(253)	—	—	—	—	(253)
Stock-based compensation	—	—	—	—	—	—	—	—	4,501	—	—	—	—	4,501
Put shares sold to majority stockholder	—	—	—	—	—	—	—	—	623	—	—	—	—	623
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(65,879)	(65,879)
BALANCE, DECEMBER 31, 2003	193	15,000	—	—	50,000	(18,153)	19,975	200	433,141	(1,412)	(228)	—	(366,971)	111,577
Issuance of Series C convertible preferred stock for cash	—	—	356	18,153	(18,153)	18,153	—	—	—	—	—	—	—	18,153
Issuance of Series C convertible preferred stock for cash already received	—	—	624	31,847	(31,847)	—	—	—	—	—	—	—	—	—
Exercise of stock options	—	—	—	—	—	—	86	—	1,079	—	—	—	—	1,079
Exercise of warrants	—	—	—	—	—	—	4	—	46	—	—	—	—	46
Accrued interest on notes	—	—	—	—	—	—	—	—	—	(107)	—	—	—	(107)
Repayment of notes receivable by stockholder issued to officers	—	—	—	—	—	—	—	—	(225)	—	228	—	—	3
Repayment of stock note receivable	—	—	—	—	—	—	(90)	(1)	(1,518)	1,519	—	—	—	—
Conversion of Series A convertible preferred stock to common stock	—	—	—	—	—	—	891	9	5,239	—	—	—	—	5,248
Conversion of Series B convertible preferred stock to common stock	(193)	(15,000)	—	—	—	—	811	8	14,992	—	—	—	—	—
Conversion of Series C convertible preferred stock to common stock	—	—	(980)	(50,000)	—	—	4,464	45	49,955	—	—	—	—	—
Issuance of common shares in exchange for warrants	—	—	—	—	—	—	22	—	—	—	—	—	—	—
Issuance of common shares under Employee Stock Purchase Plan	—	—	—	—	—	—	36	—	430	—	—	—	—	430
Net proceeds from initial public offering	—	—	—	—	—	—	6,557	66	83,110	—	—	—	—	83,176
Beneficial conversion feature of Series B convertible preferred stock	—	—	—	—	—	—	—	—	19,822	—	—	—	—	19,822
Deemed dividends related to beneficial conversion feature of Series B and Series C convertible preferred stock	—	—	—	—	—	—	—	—	(19,822)	—	—	—	—	(19,822)
Accretion to redemption value on Series A redeemable convertible preferred stock	—	—	—	—	—	—	—	—	(60)	—	—	—	—	(60)
Stock-based compensation	—	—	—	—	—	—	—	—	6,810	—	—	—	—	6,810
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(75,992)	(75,992)
BALANCE, DECEMBER 31,														

2004	—	—	—	—	—	—	32,756	327	592,999	—	—	—	(442,963)	150,363

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT) — (Continued)

(In thousands)	Series B Convertible Preferred Stock		Series C Convertible Preferred Stock		Series C Convertible Preferred Stock Issuable	Series C Convertible Preferred Stock Subscriptions Receivable	Common Stock		Additional Paid-In Capital	Notes Receivable from Stockholders	Notes Receivable from Officers	Other Comprehensive Income (Loss)	Deficit Accumulated During the Development Stage	Total
	Shares	Amount	Shares	Amount			Shares	Amount						
Issuance of common shares in exchange for warrants	—	—	—	—	—	—	24	—	245	—	—	—	—	245
Issuance of common shares under Employee Stock Purchase Plan	—	—	—	—	—	—	58	1	494	—	—	—	—	495
Exercise of stock options	—	—	—	—	—	—	304	3	1,948	—	—	—	—	1,951
Issuance of stock awards to consultants	—	—	—	—	—	—	40	1	(146)	—	—	—	—	(145)
Issuance of stock and warrants for cash	—	—	—	—	—	—	17,132	171	170,063	—	—	—	—	170,234
Stock-based compensation	—	—	—	—	—	—	—	—	(1,828)	—	—	—	—	(1,828)
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(114,338)	(114,338)
BALANCE, DECEMBER 31, 2005	—	—	—	—	—	—	50,314	503	763,775	—	—	—	(557,301)	206,977
Exercise of warrants	—	—	—	—	—	—	339	3	2,691	—	—	—	—	2,694
Issuance of common shares under Employee Stock Purchase Plan	—	—	—	—	—	—	86	1	980	—	—	—	—	981
Exercise of stock options	—	—	—	—	—	—	263	3	2,309	—	—	—	—	2,312
Cancellation of common shares for stock notes receivable	—	—	—	—	—	—	(844)	(8)	8	—	—	—	—	—
Issuance of stock for cash	—	—	—	—	—	—	23,000	230	384,440	—	—	—	—	384,670
Issuance of common shares from the release of restricted stock units	—	—	—	—	—	—	102	1	(341)	—	—	—	—	(340)
Issuance of common shares pursuant to research agreement	—	—	—	—	—	—	100	1	2,073	—	—	—	—	2,074
Stock-based compensation	—	—	—	—	—	—	—	—	14,667	—	—	—	—	14,667
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(230,548)	(230,548)
BALANCE, DECEMBER 31, 2006	—	—	—	—	—	—	73,360	734	1,170,602	—	—	—	(787,849)	383,487
Issuance of common shares under Employee Stock Purchase Plan	—	—	—	—	—	—	124	1	1,064	—	—	—	—	1,065
Exercise of stock options	—	—	—	—	—	—	607	6	4,917	—	—	—	—	4,923
Issuance of stock awards to consultants	—	—	—	—	—	—	30	—	123	—	—	—	—	123
Issuance of stock for cash	—	—	—	—	—	—	27,014	270	249,480	—	—	—	—	249,750
Issuance of common shares from the release of restricted stock units	—	—	—	—	—	—	146	2	(526)	—	—	—	—	(524)
Issuance of common shares pursuant to research agreement	—	—	—	—	—	—	100	1	943	—	—	—	—	944
Stock-based compensation	—	—	—	—	—	—	—	—	17,522	—	—	—	—	17,522
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(293,190)	(293,190)
BALANCE, DECEMBER 31, 2007	—	—	—	—	—	—	101,381	1,014	1,444,125	—	—	—	(1,081,039)	364,100

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT) — (Continued)

(In thousands)	Series B Convertible Preferred Stock		Series C Convertible Preferred Stock		Series C Convertible Preferred Stock Issuable	Series C Convertible Preferred Stock Subscriptions Receivable	Common Stock		Additional Paid-In Capital	Notes Receivable from Stockholders	Notes Receivable from Officers	Other Comprehensive Income (Loss)	Deficit Accumulated During the Development Stage	Total
	Shares	Amount	Shares	Amount			Shares	Amount						
Issuance of common shares under Employee Stock Purchase Plan	—	—	—	—	—	—	349	4	896	—	—	—	—	900
Issuance of stock awards to consultants	—	—	—	—	—	—	30	—	(18)	—	—	—	—	(18)
Issuance of common shares from the release of restricted stock units	—	—	—	—	—	—	248	2	(317)	—	—	—	—	(315)
Stock-based compensation	—	—	—	—	—	—	—	—	24,811	—	—	—	—	24,811
Unrealized gain on available-for-sale securities	—	—	—	—	—	—	—	—	—	—	—	295	—	295
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(303,039)	(303,039)
BALANCE, DECEMBER 31, 2008	—	—	—	—	—	—	102,008	1,020	1,469,497	—	—	295	(1,384,078)	86,734
Issuance of common shares under Employee Stock Purchase Plan	—	—	—	—	—	—	323	3	1,397	—	—	—	—	1,400
Issuance of stock for cash	—	—	—	—	—	—	8,360	84	59,640	—	—	—	—	59,724
Issuance of common shares from the release of restricted stock units	—	—	—	—	—	—	2,240	22	(7,023)	—	—	—	—	(7,001)
Exercise of stock options	—	—	—	—	—	—	94	1	382	—	—	—	—	383
Stock-based compensation	—	—	—	—	—	—	—	—	20,219	—	—	—	—	20,219
Unrealized loss on available-for-sale securities	—	—	—	—	—	—	—	—	—	—	—	(581)	—	(581)
Unrealized gain on foreign currency translation	—	—	—	—	—	—	—	—	—	—	—	5	—	5
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(220,104)	(220,104)
BALANCE, DECEMBER 31, 2009	—	—	—	—	—	—	113,025	1,130	1,544,112	—	—	(281)	(1,604,182)	(59,221)
Issuance of common shares under Employee Stock Purchase Plan	—	—	—	—	—	—	288	3	1,602	—	—	—	—	1,605
Issuance of stock for cash	—	—	—	—	—	—	2,100	21	14,314	—	—	—	—	14,335
Issuance of stock in exchange for cancelling an equal amount of note payable to principal stockholder	—	—	—	—	—	—	2,100	21	16,660	—	—	—	—	16,681
Issuance of stock under share lending agreement	—	—	—	—	—	—	9,000	90	71	—	—	—	—	161
Issuance of common shares from the release of restricted stock units	—	—	—	—	—	—	962	10	(3,402)	—	—	—	—	(3,392)
Exercise of stock options	—	—	—	—	—	—	318	3	921	—	—	—	—	924
Stock-based compensation	—	—	—	—	—	—	—	—	13,580	—	—	—	—	13,580
Unrealized gain on available-for-sale securities	—	—	—	—	—	—	—	—	—	—	—	361	—	361
Unrealized loss on foreign currency translation	—	—	—	—	—	—	—	—	—	—	—	(6)	—	(6)
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(170,560)	(170,560)
BALANCE, DECEMBER 31, 2010	—	—	—	—	—	—	127,793	1,278	1,587,858	—	—	74	(1,774,742)	(185,532)

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT) — (Continued)

(In thousands)	Series B Convertible Preferred Stock		Series C Convertible Preferred Stock		Series C Convertible Preferred Stock Issuable	Series C Convertible Preferred Stock Subscriptions Receivable	Common Stock		Additional Paid-In Capital	Notes Receivable from Stockholders	Notes Receivable from Officers	Other Comprehensive Income (Loss)	Deficit Accumulated During the Development Stage	Total
	Shares	Amount	Shares	Amount			Shares	Amount						
Issuance of common shares under Employee Stock Purchase Plan	—	—	—	—	—	—	283	3	766	—	—	—	—	769
Issuance of stock for cash	—	—	—	—	—	—	1,400	14	9,526	—	—	—	—	9,540
Issuance of stock in exchange for cancelling an equal amount of note payable to principal stockholder	—	—	—	—	—	—	1,400	14	11,102	—	—	—	—	11,116
Issuance of common shares from the release of restricted stock units	—	—	—	—	—	—	433	4	(547)	—	—	—	—	(543)
Exercise of stock options	—	—	—	—	—	—	214	2	626	—	—	—	—	628
Stock-based compensation	—	—	—	—	—	—	—	—	11,204	—	—	—	—	11,204
Unrealized loss on available-for-sale securities	—	—	—	—	—	—	—	—	—	—	—	(27)	—	(27)
Unrealized loss on foreign currency translation	—	—	—	—	—	—	—	—	—	—	—	(3)	—	(3)
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(160,804)	(160,804)
BALANCE, DECEMBER 31, 2011	—	—	—	—	—	—	131,523	1,315	1,620,535	—	—	44	(1,935,546)	(313,652)
Exercise of stock options	—	—	—	—	—	—	3	—	9	—	—	—	—	9
Issuance of common shares from the release of restricted stock units	—	—	—	—	—	—	886	9	(915)	—	—	—	—	(906)
Issuance of common shares pursuant to underwritten public offerings	—	—	—	—	—	—	81,938	819	166,045	—	—	—	—	166,864
Issuance of common shares in exchange for cancelling equal amounts of note payable to principal stockholder	—	—	—	—	—	—	71,250	713	183,824	—	—	—	—	184,537
Fair value of forward purchase contracts	—	—	—	—	—	—	—	—	1,237	—	—	—	—	1,237
Issuance of common shares pursuant to litigation settlement	—	—	—	—	—	—	225	2	436	—	—	—	—	438
Commitment to deliver common shares pursuant to litigation settlement to additional paid-in capital	—	—	—	—	—	—	—	—	6,056	—	—	—	—	6,056
Issuance of common shares under Employee Stock Purchase Plan	—	—	—	—	—	—	211	2	860	—	—	—	—	862
Stock-based compensation	—	—	—	—	—	—	—	—	13,292	—	—	—	—	13,292
Cumulative translation (loss) gain	—	—	—	—	—	—	—	—	—	—	—	(2)	—	(2)
Reclassification adjustment for gains (losses) included in net loss	—	—	—	—	—	—	—	—	—	—	—	(48)		(48)
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(169,366)	(169,366)
BALANCE, DECEMBER 31, 2012	—	—	—	—	—	—	286,035	2,860	1,991,379	—	—	(6)	(2,104,912)	(110,679)
Exercise of stock options	—	—	—	—	—	—	880	9	2,261	—	—	—	—	2,270
Issuance of common shares from the release of restricted stock units	—	—	—	—	—	—	1,870	20	(4,821)	—	—	—	—	(4,801)
Issuance of common shares pursuant to warrant exercises	—	—	—	—	—	—	66,353	664	171,485	—	—	—	—	172,149
Issuance of common shares pursuant to debt conversions by Deerfield	—	—	—	—	—	—	1,095	12	5,489	—	—	—	—	5,501
Issuance of common stock pursuant to ATM issuances	—	—	—	—	—	—	9,824	99	48,789	—	—	—	—	48,888
Issuance of common shares pursuant to litigation settlement	—	—	—	—	—	—	2,778	28	(28)	—	—	—	—	—
Issuance of common shares under Employee Stock Purchase Plan	—	—	—	—	—	—	557	5	1,258	—	—	—	—	1,263
Stock-based compensation	—	—	—	—	—	—	—	—	45,186	—	—	—	—	45,186
Cumulative translation (loss) gain	—	—	—	—	—	—	—	—	—	—	—	2	—	2
Commitment to deliver common shares														

pursuant to Deerfield conversion to additional paid-in capital	—	—	—	—	—	—	—	—	998	—	—	—	—	998
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	(191,490)	(191,490)
BALANCE, DECEMBER 31, 2013	—	$ —		$ —			369,392	$ 3,697	$2,261,996	$ —	$ —	$ (4)	$ (2,296,402)	$ (30,713)

See notes to consolidated financial statements.

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,			Cumulative Period from February 14, 1991 (Date of Inception) to December 31, 2013
	2011	2012	2013	
	(In thousands)			
CASH FLOWS FROM OPERATING ACTIVITIES:				
Net loss	$ (160,804)	$ (169,366)	$ (191,490)	$ (2,296,402)
Adjustments to reconcile net loss to net cash used in operating activities:				
Depreciation and accretion	15,912	14,402	14,057	140,834
Stock-based compensation expense	11,204	13,292	45,186	183,104
Stock expense for shares issued pursuant to research agreement	—	—	—	3,018
Loss (gain) on sale, abandonment/disposal or impairment of property and equipment	(4)	682	817	25,070
Accrued interest on investments, net of amortization of premiums (discounts)	—	—	—	(191)
In-process research and development	—	—	—	19,726
Goodwill impairment	—	—	—	151,428
Loss on available-for-sale securities	—	117	—	990
Fair value of forward purchase contract	—	1,237	—	1,237
Common shares issued pursuant to litigation settlement	—	438	—	438
Commitment to deliver common shares pursuant to litigation settlement	—	6,056	—	6,056
Other, net	(3)	(2)	2	1,101
Changes in assets and liabilities:				
State research and development credit exchange receivable	830	(290)	466	(297)
Prepaid expenses and other current assets	224	(1,545)	(965)	(3,535)
Other assets	87	—	—	(230)
Accounts payable	2,672	44	(1,071)	3,347
Accrued expenses and other current liabilities	6,045	15,075	3,675	38,724
Other liabilities	—	—	591	589
Net cash used in operating activities	(123,837)	(119,860)	(128,732)	(1,724,993)
CASH FLOWS FROM INVESTING ACTIVITIES:				
Purchase of marketable securities	—	—	—	(796,779)
Sales and maturities of marketable securities	3,828	—	—	796,393
Purchase of property and equipment	(6,858)	(637)	(7,987)	(335,733)
Proceeds from sale of property and equipment	93	77	—	454
Net cash used in investing activities	(2,937)	(560)	(7,987)	(335,665)
CASH FLOWS FROM FINANCING ACTIVITIES:				
Issuance of common stock and warrants, net of issuance costs	10,941	167,735	52,421	1,450,177
Collection of Series C convertible preferred stock subscriptions receivable	—	—	—	50,000
Issuance of Series B convertible preferred stock for cash	—	—	—	15,000
Cash received for common stock to be issued	—	—	—	3,900
Repurchase of common stock	—	—	—	(1,028)
Put shares sold to majority stockholder	—	—	—	623
Exercise of warrants for common stock	—	—	94,147	94,147
Borrowings under lines of credit	—	—	—	4,220
Payment of 2013 notes	—	—	(115,000)	(115,000)
Proceeds from issuance of facility financing obligation & milestone rights	—	—	119,500	119,500
Facility financing obligation & milestone rights issuance costs	—	—	(598)	(598)
Proceeds from notes receivables	—	—	—	1,742
Borrowings on notes payable to principal stockholder	53,000	12,750	—	387,750
Principal payments on notes payable to principal stockholder	—	—	—	(70,000)
Borrowings on notes payable	—	—	—	3,460
Principal payments on notes payable to our principal stockholder	—	—	—	(1,667)
Proceeds from senior convertible notes	—	—	—	207,050
Payment of employment taxes related to vested restricted stock units	(547)	(906)	(4,801)	(17,828)
Net cash provided by financing activities	63,394	179,579	145,669	2,131,448

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF CASH FLOWS — (Continued)

	Year Ended December 31,			Cumulative Period from February 14, 1991 (Date of Inception) to December 31, 2013
	2011	2012	2013	
	(In thousands)			
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	$(63,380)	$ 59,159	$ 8,950	$ 70,790
CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD	66,061	2,681	61,840	—
CASH AND CASH EQUIVALENTS, END OF PERIOD	$ 2,681	$ 61,840	$ 70,790	$ 70,790
SUPPLEMENTAL CASH FLOWS DISCLOSURES:				
Cash paid for income taxes	$ —	$ —	$ —	$ 26
Interest paid in cash, net of amounts capitalized to Construction in progress	17,248	9,755	13,452	72,604
Accretion on redeemable convertible preferred stock	—	—	—	(952)
Issuance of common stock upon conversion of notes payable	—	—	—	3,331
Increase in additional paid-in capital resulting from merger	—	—	—	171,154
Issuance of common stock for notes receivable	—	—	—	2,758
Issuance of common stock pursuant to debt conversion by Deerfield	—	—	6,500	6,500
Issuance of put option by stockholder	—	—	—	(2,949)
Put option redemption by stockholder	—	—	—	1,921
Issuance of Series C convertible preferred stock subscriptions	—	—	—	50,000
Issuance of Series A redeemable convertible preferred stock	—	—	—	4,296
Conversion of Series A redeemable convertible preferred stock	—	—	—	(5,248)
Non-cash construction in progress and property and equipment	250	4,072	856	856
Capitalization of interest on note payable to principal stockholder	—	14,219	7,886	22,105
Reduction of principal on note payable to principal stockholder upon issuance of common stock and exercise of warrants	11,116	184,537	78,000	290,334
Forward purchase contracts contribution to additional paid-in capital	—	29,317	—	29,317
Reclassification of forward purchase contracts to additional paid-in capital	—	28,080	—	28,080

In connection with the Company's initial public offering, all shares of Series B and Series C convertible preferred stock, in the amount of $15.0 million and $50.0 million, respectively, automatically converted into common stock in August 2004.

See notes to consolidated financial statements.

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Description of business and basis of presentation

Business — MannKind Corporation and subsidiaries (the "Company") is a biopharmaceutical company focused on the discovery, development and commercialization of therapeutic products for diseases such as diabetes. The Company's lead product candidate, AFREZZA, (insulin human [rDNA origin]) inhalation powder, is an ultra rapid-acting insulin therapy that is in late-stage clinical investigation for the treatment of adults with type 1 or type 2 diabetes for the control of hyperglycemia.

AFREZZA consists of the Company's proprietary Technosphere particles onto which insulin molecules are loaded. These loaded particles are then aerosolized and inhaled deep into the lung using the Company's AFREZZA inhaler.

Basis of Presentation — The Company is considered to be in the development stage as its primary activities since incorporation have been establishing its facilities, recruiting personnel, conducting research and development, business development, business and financial planning, and raising capital. It is costly to develop therapeutic products and conduct clinical studies for these products. From its inception through December 31, 2013, the Company has reported accumulated net losses of $2.3 billion, which include a goodwill impairment charge of $151.4 million and cumulative negative cash flow from operations of $1.7 billion. At December 31, 2013, the Company's capital resources consisted of cash and cash equivalents of $70.8 million. These factors raise substantial doubt about the Company's ability to continue as a going concern. The financial statements do not include any adjustments that might result from the outcome of these uncertainties.

As of December 31, 2013, the Company had $30.1 million principal amount of available borrowings under the loan arrangement with The Mann Group, or the Loan Arrangement, although the Company anticipates using a portion of these available borrowings to capitalize accrued interest into principal as it becomes due and payable under the Loan Arrangement, upon mutual agreement of the parties (see Note 6). As described in Note 16, the Facility Agreement contains a financial covenant that requires the Company's cash and cash equivalents, which include available borrowings under this Loan Arrangement, on the last day of each fiscal quarter to not be less than $25 million (see Note 16). Based on our current expectations, the Company believes that its existing capital resources will enable it to continue planned operations at least into the third quarter of 2014. However, the Company cannot provide assurances that its plans will not change or that changed circumstances will not result in the depletion of its capital resources more rapidly than it currently anticipates. The Company will need to raise additional capital, whether through a sale of equity or debt securities, a strategic business collaboration with a pharmaceutical company, the establishment of other funding facilities, licensing arrangements, asset sales or other means, in order to continue the development and commercialization of AFREZZA and other product candidates and to support its other ongoing activities. However, the Company cannot provide assurances that such additional capital will be available whether through the sale of equity or debt securities, a strategic business collaboration with a pharmaceutical company, the establishment of other funding facilities, licensing arrangements, asset sales or other means.

Capital resources potentially available to the Company include proceeds from the exercise of warrants issued in its February 2012 public offering, the Company's at-the-market issuance sales agreements (see Note 18) and issuance of additional 2019 notes and/or tranche B notes (see Note 18) to Deerfield, as more fully described below:

In February 2012, the Company sold in an underwritten public offering 35,937,500 units at an aggregate price to the public of $86.3 million, with each unit consisting of one share of common stock and a warrant to purchase 0.6 of a share of common stock. As of December 31, 2013, there were 32,843,733 warrants outstanding that, if exercised, would result in proceeds of $47.3 million.

On March 18, 2013, the Company entered into at-the-market issuance sales agreements with two sales agents, under which the Company was permitted to issue and sell shares of its common stock having an aggregate offering

price of up to $50.0 million under each agreement (provided that in no event was the Company permitted to issue and sell more than $50.0 million of shares of its common stock under both agreements in the aggregate) from time to time through either of the sales agents. As of December 31, 2013 the Company had sold $48.9 million in common stock through these agreements, net of fees, and no further sales through these agreements are permitted.

On July 1, 2013, the Company entered into the Facility Agreement, providing for the sale of up to $160.0 million of 2019 notes to Deerfield in four equal tranches of $40.0 million principal amount. In connection with the Facility Agreement, on July 1, 2013 the Company also entered into a Milestone Rights Purchase Agreement with Deerfield Private Design Fund and Horizon Santé FLML SÁRL ("HS" and together with Deerfield Private Design Fund, the "Milestone Purchasers"), pursuant to which, the Company sold the Milestone Purchasers certain rights to receive payments of up to $90.0 million upon the occurrence of specified strategic and sales milestones including the first commercial sale of an AFREZZA product and the achievement of specified net sales figures (see Note 16).

On July 1, 2013, Deerfield purchased the first tranche of 2019 notes and the Milestone Rights for an aggregate of $40.0 million. The closing of the second tranche of 2019 notes, which was subject to achievement and reporting of certain results from the Company's two Phase 3 clinical studies of AFREZZA, occurred on September 5, 2013. The closing of the third tranche of 2019 notes occurred in conjunction with the payment, at maturity, of the 2013 notes on December 9, 2013. There can be no assurance that the conditions required for the purchase of the fourth tranche of the 2019 notes will be met or met in a timeframe necessary to support the Company's liquidity needs (see Note 18).

On December 12, 2001, the stockholders of AlleCure Corp. ("AlleCure") and CTL ImmunoTherapies Corp. ("CTL") voted to exchange their shares for shares of Pharmaceutical Discovery Corporation ("PDC"). Upon approval of the merger, PDC then changed its name to MannKind Corporation. PDC was incorporated in the State of Delaware on February 14, 1991. The stockholders of PDC did not vote on the merger. At the date of the merger, Mr. Alfred Mann owned 76% of PDC, 59% of AlleCure and 69% of CTL. Accordingly, only the minority interest of AlleCure and CTL was stepped up to fair value using the purchase method of accounting. As a result of this purchase accounting, in-process research and development of $19.7 million and goodwill of $151.4 million were recorded at the entity level. The historical basis of PDC and the historical basis relating to the ownership interests of Mr. Mann in AlleCure and CTL have been reflected in the financial statements. For periods prior to December 12, 2001, the results of operations have been presented on a combined basis. All references in the accompanying financial statements and notes to the financial statements to number of shares, sales price and per share amounts of the Company's capital stock have been retroactively restated to reflect the share exchange ratios for each of the entities that participated in the merger.

For periods subsequent to December 12, 2001, the accompanying financial statements have been presented on a consolidated basis and include the wholly-owned subsidiaries, AlleCure and CTL. On December 31, 2002, AlleCure and CTL merged with and into the Company and ceased to be separate entities.

Principles of Consolidation — The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. Intercompany balances and transactions have been eliminated.

Segment Information — In accordance with Accounting Standards Codification ("ASC") 280-10-50 *Segment Reporting*, operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision-maker in making decisions regarding resource allocation and assessing performance. To date, the Company has viewed its operations and manages its business as one segment operating in the United States of America.

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

2. Summary of significant accounting policies

Financial Statement Estimates — The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("GAAP") requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates. Management considers many factors in selecting appropriate financial accounting policies and controls, and in developing the estimates and assumptions that are used in the preparation of these financial statements. Management must apply significant judgment in this process. The more significant estimates reflected in these accompanying financial statements involve assessing long-lived assets for impairment, accrued expenses, including clinical trial expenses, valuation of forward purchase contracts, valuation of Milestone Rights, valuation of the Commitment Asset, valuation of stock-based compensation and the determination of the provision for income taxes and corresponding deferred tax assets and liabilities and any valuation allowance recorded against net deferred tax assets.

Cash and Cash Equivalents — The Company considers all highly liquid investments with original or remaining maturities of 90 days or less at the time of purchase, that are readily convertible into cash to be cash equivalents. As of December 31, 2012 and 2013, cash equivalents were comprised of cash and money market accounts with maturities less than 90 days from the date of purchase.

Concentration of Credit Risk — Financial instruments which potentially subject the Company to concentration of credit risk consist of cash and cash equivalents. Cash and cash equivalents consist of interest-bearing accounts, which are regularly monitored by management and held in high credit quality institutions.

State Research and Development Credit Exchange Receivable — The State of Connecticut provides certain companies with the opportunity to exchange certain research and development income tax credit carryforwards for cash in exchange for foregoing the carryforward of the research and development credits. The program provides for an exchange of research and development income tax credits for cash equal to 65% of the value of corporation tax credit available for exchange. Estimated amounts receivable under the program are recorded as a reduction of research and development expenses.

Milestone Rights — On July 1 2013, in conjunction with the execution of the Facility Agreement, the Company issued Milestone Rights to Deerfield whereby the Company agreed to provide Deerfield with pre-specified Milestone Payments upon the achievement of 13 specific Milestone Events related to the commercial release and future cumulative net sales of AFREZZA®. The Company analyzed the Milestone Rights under the provisions of ASC 815 and determined that the agreement does not meet the definition of a freestanding derivative. Since the Company has not elected to apply the fair value option to the Milestone Rights Purchase Agreement, the Company recorded the Milestone Rights at their estimated fair value and accounted for the Milestone Rights as a liability by applying the indexed debt guidance contained in paragraphs ASC 470-10-25-3 and 35-4.

The initial fair value estimate of the Milestone Rights was calculated using the income approach in which the cash flows associated with the specified contractual payments were adjusted for both the expected timing and the probability of achieving the milestones and discounted to present value using a selected market discount rate. The expected timing and probability of achieving the milestones was developed with consideration given to both internal data, such as progress made to date and assessment of criteria required for achievement, and external data, such as market research studies. The discount rate was selected based on an estimation of required rate of returns for similar investment opportunities using available market data.

The Milestone Rights liability will be remeasured as the specified milestone events are achieved. Specifically, as each milestone event is achieved, the portion of the initially recorded Milestone Rights liability that pertains to the milestone event being achieved, will be remeasured to the amount of the specified related milestone payment. The resulting change in the balance of the Milestone Rights liability due to remeasurement will be recorded in our

MANNKIND CORPORATION AND SUBSIDIARIES
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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Statement of Operations as interest expense. Furthermore, the Milestone Rights liability will be reduced upon the settlement of each milestone payment. As a result, each milestone payment would be effectively allocated between a reduction of the recorded Milestone Rights liability and an expense representing a return on a portion of the Milestone Rights liability paid to the investor for the achievement of the related milestone event (see Note 16).

Commitment Asset — In connection with issuance of the first tranche of 2019 notes and the Milestone Rights, the Company recorded the Commitment Asset on July 1, 2013. The Commitment Asset represents the right to receive additional funding under future tranches of 2019 notes pursuant to the Facility Agreement. The initial value of the Commitment Asset was calculated using the income approach by estimating the fair value of the future tranches using a market debt rate commensurate with the risk of the future tranches and the fair value of the cash expected to be received by us and assessing the probability of the commitments being funded in the future based on the operational hurdles required for funding being met. The Commitment Asset attributable to each future tranche of 2019 notes under the Facility Agreement is derecognized and recorded as a debt discount on the 2019 notes when issued. The debt discount is amortized using the effective interest rate method over the life of the 2019 notes. Prior to derecognition occurring, the Company monitors the Commitment Asset on an ongoing basis to determine whether an impairment indicator is present that would result in a full or partial write down of the Commitment Asset as a result of events that may lead to the subsequent tranches of 2019 notes not being issued. Based on the monitoring procedures performed through December 31, 2013, the Company did not identify any indicators of impairment.

Fair Value of Financial Instruments — The Company utilizes fair value measurement guidance prescribed by GAAP to value its financial instruments. The guidance includes a definition of fair value, prescribes methods for measuring fair value, establishes a fair value hierarchy based on the inputs used to measure fair value and expands disclosures about the use of fair value measurements. The valuation techniques utilized are based upon observable and unobservable inputs. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect internal market assumptions. These two types of inputs create the following fair value hierarchy:

Level 1 – Quoted prices for identical instruments in active markets.

Level 2 – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations whose inputs are observable or whose significant value drivers are observable.

Level 3 – Significant inputs to the valuation model are unobservable.

The carrying amounts reflected in the consolidated balance sheets for cash equivalents, other current assets, accounts payable, and accrued expenses and other, approximate fair value due to their relatively short maturities.

Goodwill and Identifiable Intangibles — As a result of the merger with AlleCure and CTL on December 12, 2001, as described in Note 1, goodwill of $151.4 million was recorded at the entity level in 2001. Upon adoption of ASC 350-10 *Intangibles- Goodwill and Other,* the Company adopted a policy of testing goodwill and intangible assets with indefinite lives for impairment at least annually, as of December 31, with any related impairment losses being recognized in earnings when identified. In December 2002 the Company concluded that the major AlleCure product development program should be terminated and that the clinical trials of the CTL product should be halted and returned to the research stage. As a result of this determination, the Company closed the CTL facility and reduced headcount for AlleCure and CTL by approximately 50%. In connection with the annual test for impairment of goodwill as of December 31, 2002, the Company determined that on the basis of the internal study, the goodwill recorded for the AlleCure and CTL units was potentially impaired. The Company performed the second step of the annual impairment test as of December 31, 2002 for each of the potentially impaired reporting units and estimated the fair value of the AlleCure and CTL programs using the expected present value of future cash flows which were expected to be negligible. Accordingly, the goodwill

MANNKIND CORPORATION AND SUBSIDIARIES
(A Development Stage Company)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

balance of $151.4 million was determined to be fully impaired and an impairment loss was recorded in 2002. Subsequent to December 31, 2002, the Company had no goodwill or intangibles with indefinite lives included on its balance sheets.

Property and Equipment — Property and equipment are recorded at cost and depreciated using the straight-line method over the estimated useful lives of the related assets. Leasehold improvements are amortized over the term of the lease or the service lives of the improvements, whichever is shorter. Maintenance and repairs are expensed as incurred. Assets under construction are not depreciated until placed into service.

Impairment of Long-Lived Assets — The Company evaluates long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable in accordance with ASC 360-10-35 *Property Plant and Equipment.* Assets are considered to be impaired if the carrying value may not be recoverable based upon management's assessment of the following events or changes in circumstances:

- significant changes in the Company's strategic business objectives and utilization of the assets;
- a determination that the carrying value of such assets cannot be recovered through undiscounted cash flows;
- loss of legal ownership or title to the assets;
- a significant adverse change in legal factors or in the business climate that could affect the value of a long-lived asset (asset group), including an adverse action or assessment by a regulator; or
- the impact of significant negative industry or economic trends.

If the Company believes an asset to be impaired, the impairment recognized is the amount by which the carrying value of the assets exceeds the fair value of the assets. Any write-downs would be treated as permanent reductions in the carrying amount of the asset and an operating loss would be recognized. No asset impairment was recognized during the years ended December 31, 2011, 2012 and 2013, respectively.

Income Taxes — The provisions for federal, foreign, state, and local income taxes are calculated on pre-tax income based on current tax law and include the cumulative effect of any changes in tax rates from those used previously in determining deferred tax assets and liabilities. Deferred income tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the year in which the temporary differences are expected to be recovered or settled. A valuation allowance is recorded to reduce net deferred income tax assets to amounts that are more likely than not to be realized.

Income tax positions are considered for uncertainty in accordance with ASC 740-10-25 *Income Taxes,* The Company believes that its income tax filing positions and deductions will be sustained on audit and does not anticipate any adjustments that will result in a material change to its financial position. Therefore, no liabilities for uncertain income tax positions have been recorded. If a tax position does not meet the minimum statutory threshold to avoid payment of penalties, the Company recognizes an expense for the amount of the penalty in the period the tax position is claimed in the tax return of the Company. The Company recognizes interest accrued related to unrecognized tax benefits in income tax expense, if any. Penalties, if probable and reasonably estimable, are recognized as a component of income tax expense.

Significant management judgment is involved in determining the provision for income taxes, deferred tax assets, deferred tax liabilities, and any valuation allowance recorded against net deferred tax assets. Due to uncertainties related to the realization of the Company's deferred tax assets as a result of its history of operating losses, a valuation allowance has been established against the gross deferred tax asset balance. The valuation allowance is based on management's estimates of taxable income by jurisdiction in which the Company operates and the period over which deferred tax assets will be recoverable. In the event that actual results differ from these

estimates or the Company adjusts these estimates in future periods, a change in the valuation allowance may be needed, which could materially impact the Company's financial position and results of operations.

Contingencies — Contingencies are recorded in accordance with ASC 450 *Contingencies.* Accordingly, the Company records a loss contingency for a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. These accruals represent management's best estimate of probable loss. Disclosure also is provided when it is reasonably possible that a loss will be incurred or when it is reasonably possible that the amount of a loss will exceed the recorded provision. On a quarterly basis, the Company reviews the status of each significant matter and assesses its potential financial exposure. Significant judgment is required in both the determination of probability and the determination as to whether an exposure is reasonably estimable. Because of uncertainties related to these matters, accruals are based only on the best information available at the time. As additional information becomes available, the Company reassesses the potential liability related to pending claims and litigation and may revise our estimates. These revisions in the estimates of the potential liabilities could have a material impact on our consolidated results of operations and financial position.

Stock-Based Compensation — As of December 31, 2013, the Company had three active stock-based compensation plans, which are described more fully in Note 12. The Company accounts for all share-based payments to employees, including grants of stock awards and the compensatory elements of the employee stock purchase plan in accordance with ASC 718. ASC 718 *Compensation — Stock Compensation* ("ASC 718") requires all share-based payments to employees, including grants of stock options, restricted stock units, performance-based awards and the compensatory elements of employee stock purchase plans, to be recognized in the income statement based upon the fair value of the awards at the grant date. The Company uses the Black-Scholes option valuation model to estimate the grant date fair value of employee stock options and the compensatory elements of employee stock purchase plans. Restricted stock units are valued based on the market price on the grant date. The Company evaluates stock awards with performance conditions as to the probability that the performance conditions will be met and estimates the date at which the performance conditions will be met in order to properly recognize stock-based compensation expense over the requisite service period.

Warrants — The Company has issued warrants to purchase shares of its common stock. Warrants have been accounted for within equity in accordance with the provisions of ASC 815-40, Contracts in an Entity's Own Stock, previously EITF Issue No. 00-19: *Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock*.

Forward Contracts — The Company has entered into agreements with The Mann Group whereby the Company agreed to sell and The Mann Group agreed to purchase common stock and/or warrants. These agreements have been accounted for as forward contracts, having met the definition of derivative instruments in accordance with the provisions of ASC 815 *Derivatives and Hedging*. The Company determines the fair value of the forward contract upon its issuance, records fair value adjustments of the forward contract to Other income (expense) during the reporting period and through the settlement of the forward contract, and reclassifies the forward contract to equity upon settlement of the forward contract.

Comprehensive Loss — Other comprehensive loss is recorded in accordance with ASC 220-10-45 *Comprehensive Income,* which requires that all components of comprehensive loss be reported in the financial statements in the period in which they are recognized. Other comprehensive loss includes certain changes in stockholders' equity that are excluded from net income. Specifically, the Company includes unrealized gains and losses on its available-for-sale securities and cumulative translation gains and losses in other comprehensive loss.

Research and Development Expenses — Research and development expenses consist of costs associated with the clinical trials of the Company's product candidates, manufacturing supplies and other development materials, including raw material purchases of insulin, compensation and other expenses for research and development

personnel, costs for consultants and related contract research, facility costs, and depreciation. Research and development costs, which are net of any tax credit exchange recognized for the Connecticut state research and development credit exchange program, are expensed as incurred consistent with ASC 730-10 *Research and Development.*

Clinical Trial Expenses — Clinical trial expenses, which are reflected in research and development expenses in the accompanying statements of operations, result from obligations under contracts with vendors, consultants, and clinical site agreements in connection with conducting clinical trials. The financial terms of these contracts are subject to negotiations which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided to the Company under such contracts. The appropriate level of trial expenses are reflected in the Company's financial statements by matching period expenses with period services and efforts expended. These expenses are recorded according to the progress of the trial as measured by patient progression and the timing of various aspects of the trial. Clinical trial accrual estimates are determined through discussions with internal clinical personnel and outside service providers as to the progress or state of completion of trials, or the services completed. Service provider status is then compared to the contractually obligated fee to be paid for such services. During the course of a clinical trial, the Company may adjust the rate of clinical expense recognized if actual results differ from management's estimates.

Interest Expense — Interest costs are expensed as incurred, except to the extent such interest is related to construction in progress, in which case interest is capitalized. Interest expense, net of interest capitalized, for the years ended December 31, 2011, 2012 and 2013 was $21.8 million, $21.6 million and $21.5 million, respectively. Interest costs capitalized for the years ended December 31, 2011, 2012, and 2013 were $0.4 million, $0.3 million, and $0.4 million, respectively.

Net Loss Per Share of Common Stock — Basic net loss per common share is computed by dividing net loss by the weighted-average number of common shares outstanding during the period, excluding the dilutive effects of converting redeemable preferred stock, warrants to purchase redeemable convertible preferred stock and options. Diluted net loss per common share is computed by dividing the net loss by the sum of the weighted-average number of common shares outstanding during the period plus the potential dilutive effects of redeemable convertible preferred stock and warrants to purchase redeemable convertible preferred stock, and options outstanding during the period calculated in accordance with the treasury stock method, but are excluded if their effect is anti-dilutive. Because the impact of these items is anti-dilutive during periods of net loss, there was no difference between basic and diluted loss per common share for the year ended December 31, 2011, 2012 and 2013.

Restructuring Charges— The Company made estimates and judgments regarding the amount and timing of our restructuring expense and liability, including current and future period termination benefits, lease termination costs, and other exit costs to be incurred when related actions take place. We have also assessed the recoverability of certain long-lived assets employed in the business and, in certain instances shortened the expected useful life of the assets based on changes in their expected use. When we determine that the useful lives of assets are shorter than we had originally estimated, we record additional depreciation to reflect the assets' new shorter useful lives. Severance and other related costs and asset-related charges are reflected within our consolidated statement of operations as a component of total restructuring charges incurred. Actual results may differ from these estimates.

Recently Issued Accounting Standards — From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board (FASB) or other standard setting bodies that are adopted by the Company as of the specified effective date. Unless otherwise discussed, we believe that the impact of recently issued standards that are not yet effective will not have a material impact on our financial position or results of operations upon adoption.

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In February 2013, the FASB issued Accounting Standards Update (ASU) 2013-02, Comprehensive Income (Topic 220) — Reporting of Amounts Reclassified out of Accumulated Other Comprehensive Income. These amendments do not change the current requirements for reporting net income or other comprehensive income in the financial statements. These amendments provide for additional disclosure requirements for amounts reclassified out of accumulated other comprehensive income. These amendments are effective prospectively for interim and annual periods beginning after December 15, 2012. Early adoption is permitted. Effective January 1, 2013, the Company adopted the new requirements as set forth in ASU 2013-02 in the disclosure of comprehensive income on the Company's consolidated financial statements. The adoption of the new requirements did not have a significant impact on the Company's consolidated financial statements.

In July 2013, the FASB ASU 2013-11, Income Taxes (Topic 740): Presentation of an Unrecognized Tax Benefit when a Net Operating Loss Carryforward, a Similar Tax Loss, or a Tax Credit Carryforward Exists (a consensus of the FASB Emerging Issues Task Force). The amendments in this ASU provide guidance on the financial statements presentation of an unrecognized tax benefit when a net operating loss carryforward, a similar tax loss, or a tax credit carryforward exists. An unrecognized tax benefit should be presented in the financial statements as a reduction to a deferred tax asset for a net operating loss carryforward, a similar tax loss, or a tax credit carryforward with certain exceptions, in which case such an unrecognized tax benefit should be presented in the financial statements as a liability. The amendments in this ASU do not require new recurring disclosures. The amendments in this ASU are effective for fiscal years, and interim periods within those years, beginning after December 15, 2013. The Company does not expect the adoption of ASU 2013-11 will have an impact on the Company's consolidated financial statements.

3. State research and development credit exchange receivable

The State of Connecticut provides certain companies with the opportunity to exchange certain research and development income tax credit carryforwards for cash in exchange for forgoing the carryforward of the research and development income tax credits. The program provides for an exchange of research and development income tax credits for cash equal to 65% of the value of corporation tax credit available for exchange. Estimated amounts receivable under the program are recorded as a reduction of research and development expenses. During the years ended December 31, 2011, 2012 and 2013, research and development expenses were offset by $609,000, $289,000 and $282,000, respectively.

4. Property and equipment

Property and equipment consist of the following (dollar amounts in thousands):

	Estimated Useful Life (Years)	December 31, 2012	December 31, 2013
Land	—	$ 5,273	$ 5,273
Buildings	39-40	54,948	54,948
Building improvements	5-40	114,245	114,099
Machinery and equipment	3-15	81,382	82,189
Furniture, fixtures and office equipment	5-10	5,239	5,046
Computer equipment and software	3	11,840	11,289
Leasehold improvements	4	17	17
Construction in progress		12,266	14,756
		285,210	287,617
Less accumulated depreciation and amortization		(101,249)	(111,060)
Total property and equipment, net		$ 183,961	$ 176,557

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Leasehold improvements are amortized over four years which is the shorter of the term of the lease or the service lives of the improvements. Depreciation and amortization expense related to property and equipment for the years ended December 31, 2011, 2012 and 2013, and the cumulative period from February 14, 1991 (date of inception) to December 31, 2013 was $14.6 million, $13.0 million, $11.5 million and $133.3 million, respectively.

No asset impairment was recognized during the years ended December 31, 2011, 2012 and 2013.

In December 2009, the Company recognized a loss on disposal of approximately $12.8 million in research and development expense related to the abandonment of first-generation inhaler specific assets which would no longer be used as the Company pursued the commercialization of the next-generation device.

5. Accrued expenses and other current liabilities

Accrued expenses and other current liabilities are comprised of the following (in thousands):

	December 31,	
	2012	2013
Salary and related expenses	$ 10,074	$12,193
Research and clinical trial costs	5,995	1,311
Accrued interest	4,533	2,082
Construction in progress	3,878	342
Other	1,297	5,706
Accrued expenses and other current liabilities	$25,777	$21,634

6. Related-party arrangements

In October 2007, the Company entered into a $350.0 million loan arrangement (the "Loan Arrangement") with its principal stockholder. The Loan Arrangement has been amended from time to time. In February 2009, the promissory note underlying the Loan Arrangement was revised as a result of the principal stockholder being licensed as a finance lender under the California Finance Lenders Law. Accordingly, the lender was revised to The Mann Group. Until January 1, 2013, interest on outstanding principal amounts accrued at a fixed rate equal to the one-year LIBOR rate as reported by the *Wall Street Journal* on the date of such advance plus 3% per annum. Based on the amended terms of the agreement, the rate was fixed at 5.84% going forward. On October 31, 2013, the promissory note was further amended to, among other things, extend the maturity date of the loan to January 5, 2020, extend the date through which the Company can borrow under the Loan Arrangement to December 31, 2019, increase the aggregate borrowing amount under the Loan Arrangement from $350.0 million to $370.0 million, provide that repayments or cancellations of principal under the Loan Arrangement will not be available for reborrowing, and to cancel $78.0 million of principal indebtedness under the Loan Arrangement as payment for the aggregate exercise price of warrants, in accordance with the Common Stock and Warrant Purchase Agreement entered into with The Mann Group on October 18, 2012 (the "Mann Group Warrants"). The note payable to our principal stockholder is excluded from current liabilities due to the amendment on October 31, 2013 and presented as a non-current liability as of December 31, 2013. In addition, the Company and The Mann Group agreed to capitalize into principal $7.9 million of accrued interest that became due and payable upon cancellation of the $78.0 million of principal indebtedness.

As of December 31, 2013, the total principal amount outstanding under the Loan Arrangement was $49.5 million, and the amount available for future borrowings was $30.1 million. Interest is due and payable quarterly in arrears on the first day of each calendar quarter for the preceding quarter, or at such other time as the Company and The Mann Group mutually agree. All or any portion of accrued and unpaid interest that becomes due and payable may

be paid-in-kind and capitalized as additional borrowings at any time and would be classified as non-current upon mutual agreement of both parties. The Mann Group can require us to prepay up to $200.0 million in advances that have been outstanding for at least 12 months (less approximately $105.0 million aggregate principal amount that has been cancelled in connection with two common stock purchase agreements — a Common Stock Purchase Agreement between us and The Mann Group dated August 2010 and The Mann Group Common Stock Purchase Agreement). If The Mann Group exercises this right, the Company will have 90 days after The Mann Group provides written notice (or the number of days to maturity of the note if less than 90 days) to prepay such advances. Subject to the foregoing, in the event of a default under our loan arrangement with The Mann Group, all unpaid principal and interest either becomes immediately due and payable or may be accelerated at The Mann Group's option, and the interest rate will increase to the one-year LIBOR rate calculated on the date of the initial advance or in effect on the date of default, whichever is greater, plus 5% per annum. All borrowings under the Loan Arrangement are unsecured. The Loan Arrangement contains no financial covenants. There are no warrants associated with the Loan Arrangement.

In August 2010, the Company entered into a letter agreement confirming a previous commitment by The Mann Group to not require the Company to prepay amounts outstanding under the amended and restated promissory note, if the prepayment would require the Company to use its working capital resources. In addition, The Mann Group entered into a subordination agreement with Deerfield pursuant to which The Mann Group agreed with Deerfield not to demand or accept any payment under the Loan Arrangement until the Company's payment obligations to Deerfield under the Facility Agreement have been satisfied in full.

On August 10, 2010, the Company entered into a common stock purchase agreement with The Mann Group. Under this common stock purchase agreement, the Company was required to issue and sell, and The Mann Group was obligated to purchase, the same number of shares of the Company's common stock that Seaside 88, LP ("Seaside") purchased on each closing date under its agreement with the Company. The price of the shares that the Company sold to The Mann Group under the agreement was equal to the greater of $7.15 per share (the closing bid price of the Company's common stock on August 10, 2010) and the closing bid price of the Company's common stock on the trading day immediately preceding the applicable closing date. The aggregate purchase price for the shares of common stock the Company issued and sold to The Mann Group was paid by cancelling an equal amount of the outstanding principal under the $350.0 million loan arrangement provided by The Mann Group. An August 2010 amendment and restatement of the Company's promissory note issued to The Mann Group in connection with the Loan Arrangement also provided for the cancellation of indebtedness under the note as described above and the elimination of the Company's ability to reborrow under the note the amount of any indebtedness that was cancelled. The common stock purchase agreement with The Mann Group terminated upon termination of the Seaside agreement in the quarter ended September 30, 2011.

In the fourth quarter of 2010, the Company issued and sold a total of 2,100,000 shares of common stock to Seaside for net proceeds of $14.1 million in accordance with the Company's common stock purchase agreement with Seaside. During the quarter ended March 31, 2011, the Company issued and sold a total of 1,400,000 shares of common stock to Seaside for net proceeds of $9.7 million. No additional shares of common stock were sold to Seaside under this agreement subsequent to the quarter ended March 31, 2011. As of December 31, 2011, the Company had issued and sold a total of 3,500,000 shares of common stock to Seaside for net proceeds of $23.8 million in accordance with the agreement. The agreement with Seaside terminated during the quarter ended September 30, 2011. Concurrently, with the sales to Seaside, the Company issued and sold a total of 2,100,000 and 1,400,000 shares of common stock to The Mann Group, an entity controlled by the Company's principal stockholder, in 2010 and 2011, respectively, for a total purchase price of $16.7 million and $11.1 million, respectively, which was paid by the cancellation of outstanding principal under the Company's amended and restated promissory note with The Mann Group.

On February 8, 2012, the Company sold $86.3 million worth of units in an underwritten public offering, with each unit consisting of one share of common stock and a warrant to purchase 0.6 of a share of common stock.

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Concurrent with this public offering, The Mann Group agreed to purchase $77.2 million worth of restricted shares of common stock to be paid, at the discretion of the Company, by cash or by cancellation of principal indebtedness under the amended loan arrangement, subject to stockholder approval to increase the number of authorized shares. In May 2012, the Company's stockholders approved an increase in the authorized shares of common stock from 250,000,000 to 350,000,000. On June 27, 2012, the Company completed the closing of the sale of 31,250,000 share of its common stock through the cancellation of outstanding indebtedness under the loan agreement (see Note 10).

In October 2012, the Company sold $92.0 million worth of units in an underwritten public offering, with each unit to purchase one share of common stock and a warrant to purchase at 0.75 of a share of common stock. Concurrent with the underwritten public offering, the Company entered into a Common Stock and Warrant Purchase Agreement on October 18, 2012, in which the Company was required to issue and sell and The Mann Group was obligated to purchase 40,000,000 restricted shares of the Company's common stock at a purchase price of $2.59 per share (the consolidated closing bid price of the Company's common stock on October 17, 2012), and 40,000,000 warrants to purchase up to an aggregate of 30,000,000 restricted shares of the Company's common stock at a purchase price of $0.125 for each share of the Company's common stock underlying the warrants, in exchange for cancellation of outstanding principal under the amended and restated promissory note with The Mann Group.

The restricted shares sold to The Mann Group may not be sold, pledged, assigned or transferred unless (i) the shares have been registered with the Securities and Exchange Commission or (ii) the restricted shares are exempt from SEC registration requirements and the Company has obtained an opinion from the Company's counsel that the shares may be sold lawfully without registration.

As a result of the special meeting of the Company's stockholders held on December 20, 2012 in which the Company's stockholders approved an amendment to its Amended and Restated Certificate of Incorporation to increase the authorized shares of its common stock from 350,000,000 shares to 550,000,000 shares, the Company completed the closing of the Common Stock and Warrant Purchase Agreement. The aggregate purchase price for the shares and warrants that the Company issued to The Mann Group was approximately $107.4 million and was paid for by cancelling principal indebtedness owed to The Mann Group under the amended and restated promissory note. The cancelled principal amount became available for reborrowing until the October 31, 2013 amendment discussed above. Additionally, in accordance with the terms of the note, the Company elected to capitalize the accrued and unpaid interest on the cancelled principal amount that became due upon the closing (see Note 10).

The principal amount outstanding under the Loan Arrangement as of December 31, 2012 and 2013, respectively, subsequent to the completion of the common stock purchase agreements was as follows (in thousands):

Principal amount outstanding at December 31, 2012	$119,635
Capitalization of accrued and unpaid interest due and payable as of October 31, 2013	7,886
Reduction of principal indebtedness related to the issuance of common stock pursuant to The Mann Group Warrants completed on October 31, 2013	(78,000)
Principal amount outstanding at December 31, 2013	$ 49,521

As of December 31, 2012 and December 31, 2013, the Company had accrued and unpaid interest of $2.2 million and $0.6 million, recorded in accrued expenses and other current liabilities and other liabilities, respectively, which related to the amount outstanding and had $125.4 million and $30.1 million, respectively, of available borrowings. Interest expense on the Company's note payable to our principal stockholder for the years ended December 31, 2011, 2012 and 2013 was $10.9 million, $10.5 million and $6.3 million, respectively.

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In connection with certain meetings of the Company's board of directors and on other occasions when the Company's business necessitated air travel for the Company's principal stockholder and other Company employees, the Company utilized the principal stockholder's private aircraft, and the Company paid the charter company that manages the aircraft on behalf of the Company's majority shareholder approximately $111,000, $200,000 and $82,000, respectively, for the years ended December 31, 2011, 2012 and 2013 on the basis of the corresponding cost of commercial airfare.

The Company has entered into indemnification agreements with each of its directors and executive officers, in addition to the indemnification provided for in its amended and restated certificate of incorporation and amended and restated bylaws (see Note 13).

7. Senior convertible notes

Senior convertible notes consist of the following (in thousands):

	December 31,	
	2012	2013
2013 notes		
Principal amount	$ 115,000	$ —
Unaccreted debt issuance cost	(557)	—
Net carrying amount	114,443	—
2015 notes		
Principal amount	$ 100,000	$100,000
Unaccreted debt issuance cost	(2,417)	(1,561)
Net carrying amount	97,583	98,439
Senior convertible notes	$212,026	$98,439

On August 18, 2010, the Company completed a Rule 144A offering of $100.0 million aggregate principal amount of 5.75% Senior Convertible Notes due 2015 (the "2015 notes"). The 2015 notes are governed by the terms of an indenture dated as of August 24, 2010 (the "2015 Note Indenture"). The 2015 notes bear interest at the rate of 5.75% per year on the principal amount, payable in cash semi-annually in arrears on February 15 and August 15 of each year, beginning February 15, 2011. The Company had accrued interest of $2.2 million and $2.4 million as of December 31, 2012 and 2013, respectively, related to the 2015 notes. The 2015 notes are general, unsecured, senior obligations of the Company and effectively rank junior in right of payment to all of the Company's secured debt, to the extent of the value of the assets securing such debt, and to the debt and all other liabilities of the Company's subsidiaries. The maturity date of the 2015 notes is August 15, 2015 and payment is due in full on that date for unconverted securities. Holders of the 2015 notes may convert, at any time prior to the close of business on the business day immediately preceding the stated maturity date, any outstanding principal into shares of the Company's common stock at an initial conversion rate of 147.0859 shares per $1,000 principal amount, which is equal to a conversion price of approximately $6.80 per share, subject to adjustment. Except in certain circumstances, if the Company undergoes a fundamental change: (1) the Company will pay a make-whole premium on the 2015 notes converted in connection with a fundamental change by increasing the conversion rate on such Notes, which amount, if any, will be based on the Company's common stock price and the effective date of the fundamental change, and (2) each holder of 2015 notes will have the option to require the Company to repurchase all or any portion of such holder's notes at a repurchase price of 100% of the principal amount of the notes to be repurchased plus accrued and unpaid interest, if any. The Company may elect to redeem some or all of the 2015 notes if the closing stock price has equaled 150% of the conversion price for at least 20 of the 30 consecutive trading days ending on the trading day before the Company's redemption notice. The redemption

price will equal 100% of the principal amount of the 2015 notes to be redeemed, plus accrued and unpaid interest, if any, to, but excluding, the redemption date, plus a make-whole payment equal to the sum of the present values of the remaining scheduled interest payments through and including August 15, 2015 (other than interest accrued up to, but excluding, the redemption date). The Company will be obligated to make the make-whole payment on all the 2015 notes called for redemption and converted during the period from the date the Company mailed the notice of redemption to and including the redemption date. The Company may elect to make the make-whole payment in cash or shares of its common stock, subject to certain limitations. Under the terms of the 2015 Note Indenture, the conversion option can be net-share settled and the maximum number of shares that could be required to be delivered under the contract, including the make-whole shares, is fixed and less than the number of authorized and unissued shares less the maximum number of shares that could be required to be delivered during the contract period under existing commitments. Applying the Company's sequencing policy, the Company performed an analysis at the time of the offering of the 2015 notes and each reporting date since and concluded that the number of available authorized shares at the time of the offering and each subsequent reporting date was sufficient to deliver the number of shares that could be required to be delivered during the contract period under existing commitments.

The Company incurred approximately $4.2 million in issuance costs which are recorded as an offset to the 2015 notes in the accompanying condensed consolidated balance sheets. These costs are being charged to interest expense using the effective interest method over the term of the 2015 notes.

The 2015 notes contain provisions that upon an acceleration of certain indebtedness, which would include the 2019 notes described in Note 16, that the holders may elect to accelerate the Company's repayment obligations under the notes if such acceleration is not cured, waived, rescinded or annulled. There can be no assurance that the holders would not choose to exercise these rights in the event such events were to occur.

On December 12, 2006, the Company completed an offering of $115.0 million aggregate principal amount of 3.75% 2013 notes, including $15.0 million aggregate principal amount of the 2013 notes sold pursuant to the underwriters' over-allotment option that was exercised in full. The 2013 notes are governed by the terms of an indenture dated as of November 1, 2006 and a First Supplemental Indenture, dated as of December 12, 2006 (the "2013 Note Indenture"). The 2013 notes bear interest at the rate of 3.75% per year on the principal amount, payable in cash semi-annually in arrears on June 15 and December 15 of each year, beginning June 15, 2007. The Company had accrued interest of $192,000 and $0 as of December 31, 2012 and December 31, 2013, respectively. The 2013 notes are general, unsecured, senior obligations of the Company and effectively rank junior in right of payment to all of the Company's secured debt, to the extent of the value of the assets securing such debt, and to the debt and all other liabilities of the Company. Holders may convert, at any time prior to the close of business on the business day immediately preceding the stated maturity date, any outstanding 2013 notes into shares of the Company's common stock at an initial conversion rate of 44.5002 shares per $1,000 principal amount of 2013 notes, which is equal to a conversion price of approximately $22.47 per share, subject to adjustment. Except in certain circumstances, if the Company undergoes a fundamental change: (1) the Company will pay a make-whole premium on the 2013 notes converted in connection with a fundamental change by increasing the conversion rate on such 2013 notes, which amount, if any, will be based on the Company's common stock price and the effective date of the fundamental change, and (2) each holder of the 2013 notes will have the option to require the Company to repurchase all or any portion of such holder's 2013 notes at a repurchase price of 100% of the principal amount of the 2013 notes to be repurchased plus accrued and unpaid interest, if any. Under the terms of the 2013 Note Indenture, the conversion option can be net-share settled and the maximum number of shares that could be required to be delivered under the contract, including the make-whole shares, is fixed and less than the number of authorized and unissued shares less the maximum number of shares that could be required to be delivered during the contract period under existing commitments. Applying the Company's sequencing policy, the Company performed an analysis at the time of the offering of

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the 2013 notes and each reporting date since and concluded that the number of available authorized shares at the time of the offering and each subsequent reporting date was sufficient to deliver the number of shares that could be required to be delivered during the contract period under existing commitments. On December 15, 2013, per the agreement, the Company paid $115.0 million on the notes, thus settling the debt.

The Company incurred approximately $3.7 million in debt issuance costs which were recorded as an offset to the debt in the accompanying balance sheet. These costs were fully accreted as of December 31, 2013.

Accretion of debt issuance expense in connection with the notes offerings during the years ended December 31, 2011, 2012, and 2013 were $1.3 million, $1.4 million, and $1.4 million, respectively.

8. Restructuring charges

On February 10, 2011, the Company announced that following receipt of the Complete Response letter from the United States Food and Drug Administration regarding the new drug application for AFREZZA, it implemented a restructuring to streamline operations, reduce operating expenses, extend the cash runway and focus its resources on securing the FDA's approval of the NDA for AFREZZA. In connection with the restructuring, the Company reduced its total workforce by approximately 41% to 257 employees. The Company recorded charges of approximately $6.7 million for employee severance and other related termination benefits and recognized an initial liability of $6.7 million in February 2011, which approximated fair value.

	Workforce Reduction
Restructuring Balance, February 10, 2011	$ 6,659
Cash payments	(6,189)
Adjustment	(403)
Restructuring Balance, December 31, 2011	$ 67
Adjustment	(67)
Restructuring Balance, December 31, 2012	$ —

During the year ended December 31, 2011, the Company adjusted the restructuring balance based on the election of certain termination benefits by a portion of the terminated employees.

The remaining restructuring balance as of December 31, 2011 consists of severance and related termination benefits for employees still to be terminated.

The net $6.3 million of costs associated with the restructuring are included in "Research and development" and "General and administrative" operating expenses in the consolidated statements of operations as $4.7 million and $1.6 million, respectively, for the year ended December 31, 2011.

9. Fair Value of Financial Instruments

The carrying amounts of financial instruments, which include cash equivalents and accounts payable, approximate their fair values due to their relatively short maturities. The fair value of the note payable to our principal stockholder cannot be reasonably estimated as the Company would not be able to obtain a similar credit arrangement in the current economic environment.

Cash equivalents consist of highly liquid investments with original or remaining maturities of 90 days or less at the time of purchase that are readily convertible into cash. As of December 31, 2012 and 2013, the Company held $61.8 million and $70.8 million, respectively of cash and cash equivalents, consisting of money market funds of $60.8 million and $67.7 million, respectively, and the remaining funds in non-interest bearing checking accounts. The fair value of these money market funds was determined by using quoted prices for identical investments in an active market (Level 1 in the fair value hierarchy).

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The following is a summary of the carrying values and estimated fair values of the Company's senior convertible notes due in 2013 and 2015 and the facility financing obligation due in 2019 (in millions).

	December 31, 2012		December 31, 2013	
	Carrying value	Estimated fair value	Carrying value	Estimated fair value
2013 notes	$114.4	$ 81.9	$ —	$ —
2015 notes	$ 97.6	$ 63.2	$ 98.4	$ 102.2
2019 notes	$ —	$ —	$ 102.3	$ 107.0

Senior convertible notes

The senior convertible notes due 2013 were paid in full in December, consequently, they had a balance of $0. The estimated fair value of the 2013 notes was calculated based on quoted prices in an active market (Level 1 in the fair value hierarchy). The estimated fair value of the senior convertible notes due 2015 was calculated based on model derived valuations whose inputs were observable, such as the Company's stock price, and non-observable, such as the Company's long-term historical volatility, which was estimated to be 65% (Level 3 in the fair value hierarchy). As there is no current observable market for the senior convertible notes due 2015, the Company determined the estimated fair value using a convertible bond valuation model within a lattice framework. The convertible bond valuation model combined expected cash outflows with market-based assumptions regarding risk-adjusted yields, stock price volatility and recent price quotes and trading information regarding Company issued debt instruments and shares of common stock into which the notes are convertible.

Facility financing agreement

As discussed in Note 16 — Facility financing agreement, in connection with the Facility Agreement, the Company issued 2019 notes and Milestone Rights and recorded the Commitment Asset on July 1, 2013. As there is no current observable market for the 2019 notes, the Company determined the estimated fair value using a bond valuation model based on a discounted cash flow methodology. The bond valuation model combined expected cash flows associated with principal repayment and interest based on the contractual terms of the debt agreement discounted to present value using a selected market discount rate of 12.4% (Level 3 in the fair value hierarchy). On December 31, 2013, the market discount rate was 12.7%. The estimated fair value of the Milestone Rights was calculated using the income approach in which the cash flows associated with the specified contractual payments were adjusted for both the expected timing and the probability of achieving the milestones discounted to present value using a selected market discount rate (Level 3 in the fair value hierarchy). The expected timing and probability of achieving the milestones, starting in 2014, was developed with consideration given to both internal data, such as progress made to date and assessment of criteria required for achievement, and external data, such as market research studies. The discount rate (17.5%) was selected based on an estimation of required rate of returns for similar investment opportunities using available market data. The fair value of the Commitment Asset was estimated using the income approach by estimating the fair value of the future tranches using a market debt rate (12%) commensurate with the risk of the future tranches and the fair value of the cash expected to be received by the Company and assessing the probability of the commitments being funded in the future based on the operational hurdles required for funding being met (Level 3 in the fair value hierarchy). At December 31, 2013, the carrying value of the Milestone Rights and Commitment Asset approximates their respective estimated fair values.

Derivatives

Four embedded features that required bifurcation and separate accounting were identified in the facility financing obligation and the Company determined should be bundled together as a single, compound embedded

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derivative, bifurcated from the host contract, and accounted for at fair value, with changes in fair value being recorded in the Statement of Operations. The four embedded derivatives contained in the facility financing obligation were the Conversion Option, Major Transaction Put Option, Acceleration upon a Legal Judgment Against the Company in Excess of $100,000, and Tax Gross-Up. The four embedded features were evaluated together as a single compound derivative to determine the fair value of the derivative. The estimated fair value of the embedded derivative was calculated using Level 3 inputs and by applying a cumulative probability percentage to the values derived from a Black-Karasinski lattice model for the major transaction put option (0.8%), the conversion option feature (0.0%), and the acceleration upon a legal judgment against the Company in excess of $100,000 feature (0.1%). The Tax Gross-Up feature was evaluated using a Level 2 analysis based on the withholding requirements (i.e., the tax laws) on interest payments between the US and the British Virgin Islands and was determined to be de-minimus. As of December 9, 2013 and December 31, 2013, management determined the impact of the valuation of the embedded derivative was immaterial (see Note 16).

The fair value of foreign exchange hedging contracts equals the carrying value at each balance sheet date. The fair value of these contracts was determined using methodologies based on market observable inputs (Level 2 in the fair value hierarchy), including foreign currency spot rates. The Company used derivative financial instruments to manage its exposure to foreign currency exchange risks related to quarterly purchases on insulin. The Company does not use derivative financial instruments for trading or speculative purposes, nor does it use leveraged financial instruments. Credit risk related to derivative financial instruments was considered minimal and was managed by requiring high credit standards for counterparties and through periodic settlements of positions.

The Company entered into foreign exchange hedging contracts with notional amounts totaling $25.5 million and zero at December 31, 2010 and 2011, respectively. The Company recorded an unrealized loss on the foreign exchange hedging contracts of $0.2 million at December 31, 2010. The Company recorded a realized loss of $1.6 million and a realized gain of $1.3 million for the years ended December 31, 2010 and 2011, respectively, on the execution of quarterly foreign exchange hedging contracts. The Company terminated these contracts during the quarter ended March 31, 2011.

The Company's derivative financial instruments are not designated as hedging instruments, and gains or losses resulting from changes in the fair value are reported in other income (expense), in the consolidated statements of operations. Derivative financial instruments are recognized as other assets or other current liabilities in the financial statements and measured at fair value.

The estimated fair values in connection with the February 2012 The Mann Group Common Stock Purchase Agreement ("The February 2012 Forward Purchase Contract") and the October 2012 The Mann Group Common Stock and Warrant Purchase Agreement ("The October 2012 Forward Purchase Contract") was based on forward purchase contract valuations (Level 3 in the fair value hierarchy) (see Note 10).

The following roll-forward provides a summary of the changes in fair value of the Company's Level 3 forward purchase contracts during the year ended December 31, 2012 (in thousands) :

	The February 2012 Forward Purchase Contract	The October 2012 Forward Purchase Contract	Total
Beginning Balance	$ —	$ —	$ —
Issuance	1,080	28,237	29,317
Adjustments to fair value included in other income (expense)	12,011	(13,248)	(1,237)
Transfers to additional paid-in-capital	(13,091)	(14,989)	(28,080)
Ending Balance	$ —	$ —	$ —

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10. Common and preferred stock

Private Placements — On August 5, 2005, the Company closed a $175.0 million private placement of common stock and the concurrent issuance of warrants for the purchase of additional shares of common stock to accredited investors including the Company's principal stockholder who purchased $87.3 million of the private placement. The Company sold 17,132,000 shares of common stock in the private placement, together with warrants to purchase up to 3,426,000 shares of common stock at an exercise price of $12.228 per share which became exercisable on February 1, 2006 and expired on August 5, 2010. In connection with this private placement, the Company paid $4.5 million in commissions to the placement agents and incurred $300,000 in other offering expenses which resulted in net proceeds of approximately $170.2 million.

Public Equity Offerings — On August 5, 2009, the Company sold 8,360,000 shares of its common stock, including 960,000 shares sold pursuant to the full exercise of an over-allotment option granted to the underwriters of the offering, at a public offering price of $7.35 per share. The Company's principal stockholder purchased 1,000,000 of these shares from the underwriters at a price per share of $8.11. The sale of common stock resulted in aggregate net proceeds to the Company of approximately $59.7 million after deducting offering expenses.

Included in the common stock outstanding as of December 31, 2011, 2012 and 2013 are 9,000,000 shares of common stock loaned to Bank of America under a share lending agreement in connection with the offering of the $100.0 million aggregate principal amount of 2015 notes (see Note 7). Bank of America is obligated to return the borrowed shares (or, in certain circumstances, the cash value thereof) to the Company on or about the 45 th business day following the date as of which the entire principal amount of the notes ceases to be outstanding, subject to extension or acceleration in certain circumstances or early termination at Bank of America's option. The Company did not receive any proceeds from the sale of the borrowed shares by Bank of America, but the Company did receive a nominal lending fee of $0.01 per share from Bank of America for the use of borrowed shares.

On August 10, 2010, the Company entered into an agreement with Seaside for the sale of up to 18,200,000 shares of common stock in increments of 700,000 shares on a bi-weekly basis with the first closing date scheduled for September 22, 2010 provided that certain conditions are met, including for a particular closing to take place, the ten-day volume weighted average trading price for the Company's common stock immediately prior to such closing must be at least $6.50 per share. If the ten-day volume weighted average trading price for a particular closing was below $6.50 per share, then that closing did not occur and the aggregate number of shares to be purchased was reduced by 700,000 shares. The purchase price per share at each closing was equal to 92% of that 10-day volume weighted average price. During the years ended December 31, 2010 and 2011, the Company issued and sold a total of 2,100,000 and 1,400,000 shares of common stock, respectively, to Seaside for net proceeds of $14.1 million and $9.7 million, respectively, in accordance with the agreement. The agreement with Seaside terminated during the quarter ended September 30, 2011. During the agreement, the Company issued and sold a total of 3,500,000 shares of common stock to Seaside for net proceeds of $23.8 million. In conjunction with the Seaside agreement, on August 10, 2010, the Company entered into a common stock purchase agreement with The Mann Group. Under this common stock purchase agreement, the Company was required to issue and sell, and The Mann Group was obligated to purchase at a price equal to the greater of $7.15 per share (the closing bid price of the Company's common stock on August 10, 2010) and the closing bid price of common stock on the trading day immediately preceding the applicable closing date, the same number of shares of the Company's common stock that Seaside purchased on each closing date under its agreement with the Company (see Note 6). Concurrently with the Seaside closing, the Company issued and sold 2,100,000 and 1,400,000 shares to The Mann Group as of December 31, 2010 and 2011, respectively, for a total purchase price of $16.7 million and $11.1 million, respectively, which was paid by the cancellation of outstanding principal under the Company's loan agreement with The Mann Group. The agreement with The Mann Group terminated during the quarter ended September 30, 2011. During the agreement, the Company issued and sold a total of 3,500,000 shares of common stock to The Mann Group that had resulted in total reduction in the note payable to The Mann Group of $27.8 million.

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On February 8, 2012, the Company sold 35,937,500 units in an underwritten public offering, including 4,687,500 units sold pursuant to the full exercise of an over-allotment option granted to the underwriters, with each unit consisting of one share of common stock and a warrant to purchase 0.6 of a share of common stock. All of the securities were offered by the Company at a combined price to the public of $2.40 per unit and the underwriters purchased the units at a price of $2.256 per unit. Net proceeds from this offering were approximately $80.6 million, excluding any warrant exercises. The 21,562,500 shares of common stock underlying the warrants are exercisable at $2.40 per share and expire four years from the date of the issuance. The shares of common stock and warrants are immediately separable and were issued separately. Concurrent with the February 2012 underwritten public offering, the Company entered into a common stock purchase agreement with The Mann Group, pursuant to which the Company agreed to sell and The Mann Group agreed to purchase 31,250,000 shares of the Company's restricted common stock at a price of $2.47 per share, the closing of which was subject to the expiration or termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended ("HSR Clearance"), and the Company's receipt of stockholder approval to increase the authorized number of shares of our common stock. In June 2012, following HSR Clearance and the Company's receipt of such stockholder approval, The Mann Group purchased $77.2 million worth of restricted shares of common stock which were paid through the cancellation of principal indebtedness under the amended loan arrangement with The Mann Group (see Note 6). For the twelve months ended December 31, 2013, the Company received $4.5 million in proceeds from the exercise of the February 2012 public offering warrants, with $47.3 million remaining unexercised.

The Company concluded that The Mann Group common stock purchase agreement represented a contingent forward purchase contract that met the definition of a derivative instrument in accordance with ASC 815. Of the 31,250,000 shares issuable pursuant to the common stock purchase agreement, the portion of the derivative instrument representing 14.7 million shares were recorded as equity ("Equity Portion") as they met the criteria for equity classification under ASC 815-40 *Derivatives and Hedging, Contracts in an Entity's Own Stock.* The remaining 16.5 million shares ("Non-Equity Portion") required classification outside of equity as the Company did not have sufficient available shares at the time of issuance. The Company revalued the Non-Equity Portion of the forward purchase contract at each reporting date and recorded a fair value adjustment within "Other income (expense)". At the time of issuance, the fair value of the forward purchase contract was $2.0 million. The Equity Portion of $0.9 million was classified as equity, and the Non-Equity Portion of $1.1 million was initially recorded to "Prepaid expenses and other current assets."

On May 17, 2012, the Company's stockholders approved an increase in its authorized shares of common stock from 250,000,000 to 350,000,000. Accordingly, the shares of common stock needed to consummate The Mann Group common stock purchase agreement dated February 2, 2012 became available. As of May 17, 2012, the fair value of the Non-Equity Portion was $13.1 million. As of result of receiving stockholder approval of the increase in authorized shares, the Non-Equity Portion met the criteria for equity classification. Consequently, the Company reclassified the $13.1 million from "Prepaid expenses and other current assets" to "Additional paid-in capital."

The fair value of the forward purchase contract is highly sensitive to the discount applied for lack of marketability and the stock price, and changes in this discount and/or the stock price caused the value of the forward purchase contract to change significantly. As of and for the year ended December 31, 2012, the Company recognized the change in fair value of $12.0 million in "Other income (expense)." The Company revalued the Non-Equity Portion using a forward contract valuation formula, in which the forward contract was estimated to be equal to the valuation date stock price of $2.40 at issuance and $1.69 at May 17, 2012 minus the strike price discounted to the valuation date using a risk-free rate of 0.08% at issuance and 0.18% at May 17, 2012. As the shares which would be received upon settlement were unregistered, the Company applied a discount for lack of marketability of 2.57% at issuance and 0.42% at May 17, 2012 based on quantitative put models,

adjusted to take into account qualitative factors, including the fact that the Company's stock was publicly traded and the fact that there was no contractual restriction on the unregistered shares being registered.

In October 2012, pursuant to a previously filed Shelf Registration, which was declared effective by the SEC on September 24, 2012, the Company sold in an underwritten public offering 40,000,000 shares of its common stock, together with warrants to purchase up to 30,000,000 shares of the Company's common stock. In addition, the Company sold pursuant to the full exercise of an over-allotment option granted to the underwriters, an additional 6,000,000 shares of common stock, together with warrants to purchase up to an aggregate of 4,500,000 shares of common stock. All of the securities were sold together with a warrant for a combined purchase price of $2.00 per unit. The shares of common stock and warrants are immediately separable and were issued separately. Net proceeds from this offering were approximately $86.3 million (after deducting discounts and commissions to the underwriters and offering expenses), excluding any future proceeds from the exercise of the warrants. Each warrant entitles the holder to purchase 0.75 of a share of common stock. The warrants are exercisable at $2.60 per share and expired in October 2013. The Company received $89.7 million in proceeds from the exercise of such warrants prior to their expiration. The Company performed an analysis of the warrants to determine their appropriate classification and concluded that the warrants should be classified within equity.

Concurrently with the underwritten public offering, the Company entered into a Common Stock and Warrant Purchase agreement, in which the Company was required to issue and sell and The Mann Group was obligated to purchase 40,000,000 restricted shares of the Company's common stock and 40,000,000 warrants to purchase up to an aggregate of 30,000,000 restricted shares of the Company's common stock in a separate private placement. The restricted shares were sold to The Mann Group at $2.59 per share (the consolidated closing bid price of the Company's common stock on October 17, 2012), and the warrants were sold to The Mann Group at a purchase price of $0.125 for each share of the Company's common stock underlying the warrants, in exchange for cancellation of outstanding principal under the $350.0 million amended and restated promissory note with The Mann Group. The restricted shares and warrants were sold to The Mann Group for an aggregate purchase price of $107.4 million. Following receipt of stockholder approval, in December 2012, to increase the Company's authorized shares of common stock from 350,000,000 to 550,000,000, the Common Stock and Warrant Purchase agreement was consummated, and the shares of common stock and warrants were issued to The Mann Group.

On the date the Common Stock and Warrant Purchase agreement was entered into with The Mann Group, the Company did not have a sufficient number of authorized, unissued and available common shares to satisfy their commitments under this agreement. The Company characterized the Common Stock and Warrant Purchase agreement as a forward contract, in accordance with ASC 815-40, to deliver a single unit comprising 40,000,000 shares of restricted common stock and 40,000,000 warrants to purchase 30,000,000 shares of restricted common stock that should be classified as assets or liabilities accounted for at fair value.

At the time of issuance, the Company determined the fair value of the forward contract to be $28.2 million and recorded a current asset. On December 20, 2012, the date at which a sufficient number of authorized and unissued common shares became available following approval by the stockholders to increase its authorized shares of common stock, the Company re-valued the forward contract and recorded a fair value adjustment to "Other income (expense)" of $13.2 million expense. Therefore, having met the criteria for equity classification, the Company reclassified the remaining balance of the forward contract of $15.0 million to additional paid in capital. In addition, the Company performed an analysis of the warrants to determine their appropriate classification once the forward contract settled and concluded that the warrants should be classified within equity.

The fair value of the forward purchase contract is highly sensitive to the discount applied for lack of marketability and the stock price, and changes in this discount and/or the stock price caused the value of the Forward Contract to change significantly. The value of the derivative instrument was calculated using a forward contract valuation formula in which the forward contract is estimated to be equal to the valuation date stock price

minus the strike price discounted to the valuation date using a risk-free rate of 0.11% at issuance on October 18, 2012 and 0.00% at closing on December 20, 2012. As the shares which would be received upon settlement are currently unregistered, the Company applied a discount for lack of marketability of 2.3% at October 18, 2012 and 1.5% at December 20, 2012 to reflect this lack of marketability based on quantitative put models, adjusted to take into account qualitative factors, including the fact that the Company's stock is publicly traded and the fact that there is no contractual restriction on the unregistered shares being registered.

The Company then determined that upon the settlement of the forward contracts, the common stock and warrants represent freestanding financial instruments and should be initially recorded at their relative fair values based on the total consideration received. The total consideration received equaled the $107.4 million principal amount of indebtedness cancelled less the recorded value of the forward contracts on December 20, 2012, the date immediately before settlement.

On October 31, 2013, under the Amended and Restated Promissory Note, the Company issued 30,000,000 shares of common stock to The Mann Group upon the exercise of warrants. In exchange, the Company and The Mann Group agreed to cancel $78.0 million of outstanding principal indebtedness and to capitalize into principal the approximately $7.9 million of accrued interest that became due and payable upon cancellation of such principal indebtedness.

On July 1, 2013, the Company entered into the Facility Agreement (see Note 16) pursuant to which the Company had sold $120.0 million aggregate principal amount of notes to Deerfield in three tranches occurring on July 1, 2013, September 5, 2013 and December 9, 2013. Subject to certain conditions, as of December 31, 2013, Deerfield was permitted to convert a portion of the 2019 notes into shares of the Company's common stock as described under "Conversion Option" in Note 16 below. As of December 31, 2013, Deerfield converted $6.5 million of principal from the 2019 notes, resulting in an issuance of 1,293,224 shares of common stock. The outstanding principal amount as of December 31, 2013 was $113.5 million (see Note 18).

The Company is authorized to issue 550,000,000 shares of common stock, par value $0.01 per share, and 10,000,000 shares of undesignated preferred stock, par value $0.01 per share, issuable in one or more series designated by the Company's board of directors. No other class of capital stock is authorized. As of December 31, 2012 and 2013, 286,035,082 and 369,391,972 shares of common stock, respectively, were issued and outstanding and no shares of preferred stock were outstanding.

11. Net loss per common share

Basic net loss per share excludes dilution for potentially dilutive securities and is computed by dividing loss applicable to common stockholders by the weighted average number of common shares outstanding during the period excluding the shares loaned under the share lending arrangement (see Note 10). As of December 31, 2011, 2012 and 2013, 9,000,000 shares of the Company's common stock, which were loaned to a share borrower pursuant to the terms of a share lending agreement, as described in Note 10, were issued and are outstanding, and holders of the borrowed shares have all the rights of a holder of the Company's common stock. However, because the share borrower must return all borrowed shares to the Company (or, in certain circumstances, the cash value thereof), the borrowed shares are not considered outstanding for the purpose of computing and reporting basic or diluted earnings (loss) per share. Diluted net loss per share reflects the potential dilution that could occur if securities or other contracts to issue common stock were exercised or converted into common stock. Potentially dilutive securities are excluded from the computation of diluted net loss per share for all of the periods presented in the accompanying statements of operations because the reported net loss in each of these periods results in their inclusion being antidilutive. Antidilutive securities, which consist of stock options, restricted stock units, warrants, and shares that could be issued upon conversion of the 2015 senior convertible notes and the 2019 notes, that are not included in the diluted net loss per share calculation exclude the 9,000,000 shares of the Company's common stock loaned under the share lending arrangement as of December 31, 2012 and 2013.

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Potentially dilutive securities outstanding are summarized as follows:

	December 31,		
	2011	2012	2013
Exercise of common stock options	10,082,351	18,674,539	24,237,940
Conversion of senior convertible notes into common stock	19,826,113	19,826,113	25,415,366
Exercise of common stock warrants	—	86,062,440	19,706,240
Vesting of restricted stock units	4,140,388	3,761,031	9,115,821
	34,048,852	128,324,123	78,475,367

12. Stock award plans

On May 23, 2013, the Company adopted the 2013 Equity Incentive Plan (the "2013 Plan") as the successor to and continuation of the 2004 Equity Incentive Plan (the "2004 Plan"). The 2013 Plan consists of 21.5 million newly requested shares and the number of unallocated shares remaining available for grant for new awards under the 2004 Plan. The 2013 Plan provides for the granting of stock awards including stock options and restricted stock units, to employees, directors and consultants. The Plan also provides for the automatic, non-discretionary grant of options to the Company's non-employee directors. No additional awards will be granted under the 2004 Plan or under the 2004 Non-Employee Directors' Stock Option Plan (the "NED Plan") as all future awards will be made out of the 2013 Plan.

As of December 31, 2013, the Company has two active stock-based compensation plans — the 2013 Plan and the 2004 Employee Stock Purchase Plan (the "ESPP"). The following table summarizes information about the Company's stock-based award plans as of December 31, 2013:

	Outstanding Options	Outstanding Restricted Stock Units	Shares Available for Future Issuance
2004 Equity Incentive Plan	16,792,784	6,949,202	—
2013 Equity Incentive Plan	6,754,325	2,166,619	13,590,564
2004 Non-Employee Directors' Stock Option Plan	690,831	—	—
Total	24,237,940	9,115,821	13,590,564

The Company's board of directors determines eligibility, vesting schedules and exercise prices for stock awards granted under the 2013 Plan. The 2013 Plan provides for automatic, non-discretionary grant of options to the Company's non-employee directors. Options and other stock awards under the 2013 Plan expire not more than ten years from the date of the grant and are exercisable upon vesting. Stock options generally vest over four years. Current stock option grants vest and become exercisable at the rate of 25% after one year and ratably on a monthly basis over a period of 36 months thereafter. Restricted stock units generally vest at a rate of 25% per year over four years with consideration satisfied by service to the Company. Performance-based awards vest upon achieving pre-determined performance milestones, which are expected to occur over periods ranging from 11 months to 96 months from the date of grant. All but one of the milestones is considered probable as of December 31, 2013. The 2013 Plan provides for full acceleration of vesting if an employee is terminated within three months of a change in control, as defined in the 2013 Plan.

On May 23, 2013, the Compensation Committee also approved a management proposal designed to encourage employee retention. The proposal involved the grant of 5,598,100 performance-based stock options and 1,687,900 performance-based restricted stock units to employees, including executive officers of the Company. These grants have vesting terms subject to the achievement of specified regulatory and business development milestones related to AFREZZA. The performance-based options and performance-based restricted stock units had a grant date per share fair value of $3.05 and $6.85, respectively.

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On March 7, 2013, the Compensation Committee approved a management proposal designed to encourage employee retention. The proposal involved the grant of performance-based restricted stock units to employees, including executive officers of the Company. A total of 5,846,000 restricted stock units were granted with vesting terms subject to the achievement of specified regulatory and business development milestones related to AFREZZA. The performance-based restricted stock units had a grant date fair value of $2.81.

On May 17, 2012, the Compensation Committee also approved a management proposal designed to encourage employee retention. The proposal involved the grant of stock options and restricted stock units to employees, including executive officers of the Company. A total of 3,942,500 options were granted with vesting terms subject to MannKind Corporation's achievement of specified regulatory and business development milestones related to AFREZZA. A total of 3,892,500 options were granted with time-based vesting terms of 25% every 6 months beginning November 1, 2012, to be fully vested on May 1, 2014. The performance-based options and time-based stock options had a grant date fair value of $0.60 and $1.12, respectively.

On March 3, 2011, the Compensation Committee approved a management proposal designed to encourage employee retention. The proposal involved the issuance of restricted stock units and stock options to the majority of employees and executive officers of the Company. A total of 1,177,300 restricted stock units and 1,467,500 stock options were granted under the 2004 Plan. These units vested 50% annually for two years and became fully vested on March 3, 2013. Stock compensation expense associated with these grants was recorded on a straight line basis from March 3, 2011 through March 3, 2013 and was approximately $8.2 million.

On July 9, 2008, the Company announced an Offer to Exchange Outstanding Options to Purchase Common Stock (the "Offer") under which the Company offered eligible employees the opportunity to exchange out-of-the money stock options covering up to an aggregate of 5,417,840 shares on a grant by grant basis for a reduced number of restricted stock units. The Offer expired on August 6, 2008. Pursuant to the Offer, the Company accepted for exchange options to purchase an aggregate of 4,493,509 shares of the Company's common stock and issued restricted stock units covering an aggregate of 2,246,781 shares of the Company's common stock. For the restricted stock units issued pursuant to the offer, both the remaining estimated unamortized stock compensation expense related to the exchanged options of approximately $13.9 million and the estimated incremental stock compensation expense resulting from the exchange of approximately $3.7 million was amortized over the vesting period ending on August 1, 2010.

In March 2004, the Company's board of directors approved the ESPP, which became effective upon the closing of the Company's initial public offering. Initially, the aggregate number of shares that could be sold under the 2004 Plan was 2,000,000 shares of common stock. On January 1 of each year, for a period of ten years beginning January 1, 2005, the share reserve automatically increases by the lesser of: 700,000 shares, 1% of the total number of shares of common stock outstanding on that date, or an amount as may be determined by the board of directors. However, under no event can the annual increase cause the total number of shares reserved under the ESPP to exceed 10% of the total number of shares of capital stock outstanding on December 31 of the prior year. On January 1, 2011, 2012 and 2013 the ESPP share reserve was increased by 700,000, 700,000 and 700,000 shares, respectively. As of December 31, 2013, 2,679,007 shares were available for issuance under the ESPP. For the years ended December 31, 2011, 2012 and 2013 the Company sold 282,816, 422,260 and 463,290 shares, respectively, of its common stock to employees participating in the ESPP. The ESPP purchase for the period ending December 31, 2013 was initiated prior to year end but did not settle until January 6, 2014. As a result, the shares sold are reflected in the ESPP share reserves but is excluded from common stock outstanding as of December 31, 2013.

In accordance with ASC 718, share-based payment transactions are recognized as compensation cost based on the fair value of the instrument on the date of grant. The Company accounts for non-employee stock-based compensation expense based on the estimated fair value of the options, which is determined using the Black-

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Scholes option valuation model and amortizes such expense on a straight-line basis over the service period for time-based awards and over the expected dates of achievement for performance-based awards. These awards are subject to re-measurement until service is complete. As of December 31, 2013, there were options to purchase 203,700 shares of common stock outstanding to consultants.

During the years ended December 31, 2011, 2012 and 2013 the Company recorded stock-based compensation expense related to its stock award plans and the ESPP of $11.2 million, $13.3 million, and $45.2 million, respectively.

Total stock-based compensation expense recognized in the accompanying statements of operations is as follows (in thousands):

	Year Ended December 31,		
	2011	2012	2013
Employee-related	$11,202	$ 13,224	$45,181
Consultant-related	2	68	5
Total	$11,204	$13,292	$45,186

Total stock-based compensation expense recognized in the accompanying statements of operations is included in the following categories (in thousands):

	Year Ended December 31,		
	2011	2012	2013
Research and development	$ 5,366	$ 6,167	$ 20,409
General and administrative	5,838	7,125	24,777
Total	$11,204	$13,292	$45,186

The Company uses the Black-Scholes option valuation model to estimate the grant date fair value of employee stock options. The expected term of an option granted is based on combining historical exercise data with expected weighted time outstanding. Expected weighted time outstanding is calculated by assuming the settlement of outstanding awards is at the midpoint between the remaining weighted average vesting date and the expiration date.

The Company estimates volatility using the historical volatility of its stock. The Company has selected risk-free interest rates based on U.S. Treasury securities with an equivalent expected term in effect on the date the options were granted. Additionally, the Company uses historical data and management judgment to estimate stock option exercise behavior and employee turnover rates to estimate the number of stock option awards that will eventually vest. The Company calculated the fair value of employee stock options granted during the years ended December 31, 2011, 2012 and 2013 using the following assumptions:

	Year Ended December 31,		
	2011	2012	2013
Risk-free interest rate	0.10% — 2.43%	0.32% — 1.16%	0.94% — 1.82%
Expected lives	1.1 — 6.1 years	1.4 — 6.1 years	2.64 — 5.77 years
Volatility	76% — 83%	70% — 84%	75.83% — 86.26%
Dividends	—	—	—

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The following table summarizes information about stock options outstanding:

	Number of Shares	Weighted Average Exercise Price per Share	Aggregate Intrinsic Value ($000)
Outstanding at January 1, 2013	18,674,539	3.46	$ 4,867
Granted	6,919,900	6.63	
Exercised	(881,139)	2.60	
Forfeit	(287,374)	2.93	
Expired	(187,986)	10.65	
Outstanding at December 31, 2013	24,237,940	4.35	$ 40,972
Vested and expected to vest at December 31, 2013	23,533,436	4.35	$ 40,972
Exercisable at December 31, 2013	12,358,495	4.36	$22,126

The weighted average grant date fair value of the stock options granted during the years ended December 31, 2011, 2012 and 2013 was $2.04, $0.99 and $3.26 per option, respectively. The total intrinsic value of options exercised during the years ended December 31, 2011, 2012 and 2013 was $443,000, $1,000 and $3.1 million, respectively. Intrinsic value is measured using the fair market value at the date of exercise (for options exercised) or at December 31 (for outstanding options), less the applicable exercise price.

Cash received from the exercise of options during the years ended December 31, 2011, 2012 and 2013 was approximately $625,000, $9,200 and $2.3 million, respectively. The weighted-average remaining contractual terms for options outstanding, vested and expected to vest, and exercisable at December 31, 2013 was 7.80 years, 7.77 years and 6.84 years, respectively.

A summary of restricted stock unit activity for the year ended December 31, 2013 is presented below:

	Number of Shares	Weighted Average Grant Date Fair Value per Share
Outstanding at January 1, 2013	3,761,031	$ 3.73
Granted	8,481,459	$ 3.93
Vested	(2,861,059)	$ 3.82
Forfeited	(265,610)	$ 3.36
Outstanding at December 31, 2013	9,115,821	$ 3.90

The total restricted stock units expected to vest as of December 31, 2013 was 8,761,363 with a weighted average grant date fair value of $3.40. The total intrinsic value of restricted stock units expected to vest as of December 31, 2013 was $45.6 million. Intrinsic value of restricted stock units expected to vest is measured using the closing share price at December 31, 2013.

Total intrinsic value of restricted stock units vested during the years ended December 31, 2011, 2012 and 2013 was $1.7 million, $2.9 million and $13.9 million, respectively. Intrinsic value of restricted stock units vested is measured using the closing share price on the day prior to the vest date. The total fair value of restricted stock units vested during the years ended December 31, 2011, 2012 and 2013 was $1.6 million, $3.0 million and $14.9 million, respectively.

As of December 31, 2013, there was $15.2 million and $23.2 million of unrecognized compensation expense related to options and restricted stock units, respectively, which is expected to be recognized over the weighted

average vesting period of 1.6 years. The Company evaluates stock awards with performance conditions as to the probability that the performance conditions will be met and estimates the date at which the performance conditions will be met in order to properly recognize stock-based compensation expense over the requisite service period. As of December 31, 2013, there was $107,000 and $3.7 million of unrecognized expenses related to performance-based options and restricted stock units, respectively, for milestones not considered probable of achievement.

13. Commitments and contingencies

Operating Leases — The Company leases certain facilities and equipment under various operating leases, which expire at various dates through 2014 and beyond. Future payments are deemed insignificant.

Rent expense under all operating leases, including office space and equipment, for the years ended December 31, 2011, 2012, and 2013 was approximately $766,000, $675,000, and $645,000 respectively.

Capital Leases — The Company's capital leases were not material for the years ended December 31, 2011, 2012 and 2013.

Supply Agreement — In November 2007, the Company entered into a long-term supply agreement with N.V. Organon ("Organon"), now a subsidiary of Merck & Co., Inc. (the "Supply Agreement"), pursuant to which Organon manufactured and supplied specified quantities of recombinant human insulin to the Company. In June 2011, the Company entered into a letter agreement (the "Letter Agreement") with Organon to settle a dispute that arose between the Company and Organon in connection with the termination by the Company of the Supply Agreement. Under the terms of the Letter Agreement, the Company paid Organon an aggregate of $16.0 million in two installments, each of which was paid after the Company received certain quantities of recombinant human insulin manufactured and supplied by Organon. The Letter Agreement is in full and final settlement of, and the Company and Organon agreed to release each other from, any and all actions and claims that the Company and Organon had or may have against each other in connection with the dispute regarding the Supply Agreement and related matters. The Company has concluded that the Letter Agreement represents a multiple element arrangement consisting of two elements representing the purchase of insulin and a contract cancellation fee. The Company has allocated the $16.0 million settlement in the following manner: first to the fair value of the insulin received, which was recorded as expense of $8.4 million and the remaining $7.6 million to the contract cancellation fee. These charges were recorded to "Research and development" operating expenses in the consolidated statements of operations of 2011.

Guarantees and Indemnifications — In the ordinary course of its business, the Company makes certain indemnities, commitments and guarantees under which it may be required to make payments in relation to certain transactions. The Company, as permitted under Delaware law and in accordance with its Bylaws, indemnifies its officers and directors for certain events or occurrences, subject to certain limits, while the officer or director is or was serving at the Company's request in such capacity. The term of the indemnification period is for the officer's or director's lifetime. The maximum amount of potential future indemnification is unlimited; however, the Company has a director and officer insurance policy that may enable it to recover a portion of any future amounts paid. The Company believes the fair value of these indemnification agreements is minimal. The Company has not recorded any liability for these indemnities in the accompanying consolidated balance sheets. However, the Company accrues for losses for any known contingent liability, including those that may arise from indemnification provisions, when future payment is probable. No such losses have been recorded to date.

Litigation — The Company is subject to legal proceedings and claims which arise in the ordinary course of its business. As of December 31, 2013, the Company believes that the final disposition of such matters will not have a material adverse effect on the financial position, results of operations or cash flows of the Company. The Company maintains liability insurance coverage to protect the Company's assets from losses arising out of or

involving activities associated with ongoing and normal business operations. In accordance with ASC 450 *Contingencies*, the Company records a provision for a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. The Company's policy is to accrue for legal expenses in connection with legal proceeding and claims as they are incurred.

The Securities Action. Beginning January 31, 2011, several complaints were filed in the U.S. District Court for the Central District of California against the Company and four of our officers — Alfred E. Mann, Hakan S. Edstrom, Dr. Peter C. Richardson (a former officer) and Matthew J. Pfeffer — on behalf of certain purchasers of our common stock. The complaints include claims asserted under Sections 10(b) and 20(a) of the Exchange Act and were brought as purported shareholder class actions. In general, the complaints alleged that the defendants violated federal securities laws by making materially false and misleading statements regarding our business and prospects for AFREZZA, thereby artificially inflating the price of the Company's common stock. The U.S. District Court for the Central District of California consolidated the pending actions for all purposes. The consolidated action is referred to as the Securities Action.

On July 23, 2012, the Company, while continuing to deny all allegations of wrongdoing or liability whatsoever arising out of the Securities Action, and without in any way admitting fault or liability, entered into a stipulation of settlement to resolve the Securities Action. The current and former officers and directors named as individual defendants in the consolidated lawsuits also entered into the stipulation of settlement.

In exchange for a release of all claims by the class members, among others, and a dismissal of the consolidated lawsuits, the Company agreed (i) to cause the Company's insurers to pay class members and their attorneys a total of $16.0 million; and (ii) to issue to class members and their attorneys 2,777,778 shares of the Company's common stock. The Company also agreed that if the consolidated closing bid price for the Company's common stock is below $1.00 per share on the date the U.S. District Court enters an order of final judgment, then the Company will issue into the Escrow Account an additional 1,000,000 shares of its common stock. On September 12, 2012, the U.S. District Court preliminarily approved the settlement.

On December 21, 2012, the U.S. District Court issued the Order and Final Judgment, providing final approval of the settlement for the securities action. The Order and Final Judgment consisted of requiring the Company to cause its insurers to pay $16.0 million and to issue the 2,777,778 shares of its common stock in accordance with the stipulation of settlement. The Order and Final Judgment did not include the requirement of the Company to issue the additional 1,000,000 shares of its common stock. In late September and in early October, following the preliminary approval of the settlement, the Company's insurers remitted payment of the $16.0 million into the Escrow Account. On December 31, 2012, following final approval of the settlement, the Company initiated the transfer of the 2,777,778 shares of its common stock into the Escrow Account. The stock transfer settled on January 2, 2013. The shares were issued pursuant to an exemption from registration provided by Section 3(a)(10) of the Securities Act of 1933, as amended. As of December 31, 2012, the Securities Action was concluded.

The Derivative Actions. Beginning in February 2011, several shareholder derivative complaints were filed in the Superior Court of California for the County of Los Angeles and in the U.S. District Court for the Central District of California against all of the Company's directors and certain of its officers. The complaints in the shareholder derivative actions allege breaches of fiduciary duties by the defendants and other violations of law. In general, the complaints allege that the defendants caused or allowed for the dissemination of materially false and misleading statements regarding its business and prospects for AFREZZA, thereby artificially inflating the price of its common stock. The Superior Court of California for the County of Los Angeles consolidated the actions pending before it. The consolidated state derivative actions are referred to as the State Derivative Action. The U.S. District Court for the Central District of California has also consolidated the derivative actions pending before it. The consolidated federal derivative actions are referred to as the Federal Derivative Action. The State Derivative Action and the Federal Derivative Action are collectively referred to as the Derivative Actions.

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On August 3, 2012, the Company, while continuing to deny all allegations of wrongdoing or liability whatsoever arising out of the Derivative Actions and without in any way admitting fault or liability, entered into a stipulation of settlement to resolve the Derivative Action. Subject to preliminary and final approval of the settlement by the U.S. District Court and notice to shareholders, and in an exchange for a release of all claims by the plaintiffs, among others, and a dismissal of the Derivative Actions, the Company agreed (i) to adopt certain corporate governance measures, (ii) to cause the Company's insurers to pay the plaintiffs' attorneys a total of $800,000, and (iii) to issue plaintiffs' attorneys 225,000 shares of the Company's common stock. On September 12, 2012, the U.S. District Court preliminarily approved the settlement.

On November 19, 2012, the U.S. District Court issued the Order and Final Judgment, providing final approval of the settlement for the derivative action. The Order and Final Judgment consisted of requiring the Company to cause its insurers to pay $800,000 and to issue the 225,000 shares of its common stock in accordance with the stipulation of settlement. In late September and in early October, following the preliminary approval of the settlement, the Company's insurers remitted payment of the $800,000 into an account established by the plaintiffs' attorneys. In December 2012, following final approval of the settlement, the Company transferred the 225,000 shares of its common stock into an investment brokerage account established by the plaintiffs' attorneys. The shares were issued pursuant to an exemption from registration provided by Section 3(a)(10) of the Securities Act of 1933, as amended. As of December 31, 2012, the Derivative Actions were concluded.

As a result of settlement discussions with the plaintiffs taking place in the latter part of the quarter ended June 30, 2012 and entering into the stipulation of settlement for the Securities Action on July 23, 2012 and for the Derivative Action on August 3, 2012, the Company determined that the liabilities pertaining to both the securities and derivative lawsuits were probable as of June 30, 2012. The Company's financial statements as of and for the three months ended June 30, 2012 reflected the following accruals:

(i) *Cash consideration*. The Company recorded a current liability of $16.8 million under "Accrued expense and other current liabilities" and a corresponding current asset under "Prepaid expenses and other current asset" to reflect a receivable from the Company's insurers. The Company has determined that the collectability of the receivable from the insurers is probable. The cash obligation resulted in no charge to the Company's Condensed Consolidated Statements of Operations for the period.

(ii) *Stock consideration*. The Company recorded a charge to "General and administrative" expenses and an estimated current liability under "Accrued expense and other current liabilities" of $7.7 million representing the estimated fair value of the 3,002,778 common shares to be issued in the aggregate subject to court approval.

(iii) *Additional stock consideration*. The Company concluded that the contingent obligation to issue an additional 1,000,000 shares of its common stock, as defined in the stipulation of settlement agreement for the Securities Action, met the definition of a derivative instrument in accordance with ASC 815. The Company estimated the fair value of the derivative instrument using the Monte Carlo simulation model to forecast the contingent obligation applying probabilities that the stock price will be lower than $1.00 based on the following assumptions: expected volatility of 60%, risk free interest rate of 0.16% and final judgment dates ranging from four to six months. As a result, the Company estimated the fair value of this contingent obligation to be immaterial.

As of September 30, 2012, the Company estimated the aggregate fair value of the stock consideration at $8.6 million and recognized an increase in the contingent liability of $901,000 during the quarter ended September 30, 2012. During the quarter ended September 30, 2012, the Company remeasured the additional stock consideration using the Monte Carlo simulation model to forecast the contingent obligation applying probabilities that the stock price will be lower than $1.00 based on the following assumptions: expected volatility

of 54%, risk free interest rate of 0.1% and final judgment date on or before December 31, 2012. As a result, the Company estimated the fair value of this contingent obligation related to the additional stock consideration to be immaterial.

The Company considered the following in its financial statements as of and for the year ended December 31, 2012:

(i) *Cash consideration*. Upon satisfying the conditions of cash payment during the fourth quarter of 2012 and receiving final approvals of settlement, the Company relieved from its balance sheet the $16.8 million of current liability and current receivable from insurers as of December 31, 2012.

(ii) *Stock consideration*. As of December 31, 2012, the Company satisfied the conditions of issuing 225,000 shares of its common stock on the Derivative Action. With respect to the Securities Action, the issuance of 2,777,778 shares was initiated prior to year end and subsequently settled after year end. The Company concluded that the requirement to deliver these shares of common stock met the definition of a financial instrument representing a contingent forward contract in accordance with ASC 815 and that the forward contract met the criteria for equity classification, and further remeasurement through settlement was not required. The forward contract to issue shares settled on January 2, 2013, upon consummation of the delivery of these shares. The final fair values of the stock consideration are summarized in the following table:

	Number of Shares	Closing Price Per Share on Final Approval Date	Final Fair Value of Stock Consideration
Derivative Action	225,000	$ 1.94	$ 436,500
Securities Action	2,777,778	$ 2.18	6,055,556
Total	3,002,778		$ 6,492,056

In recognizing the fair value of the total stock consideration to equity on the date of final approval of the respective settlements, the Company released the previously recorded litigation accrual of $8.6 million, recognized the fair value of the total stock consideration of $6.5 million to equity, and recorded an adjustment to decrease legal expense by $2.1 million in the fourth quarter of 2012.

14. Employee benefit plans

The Company administers a 401(k) Savings Retirement Plan (the "MannKind Retirement Plan") for its employees. For the years ended December 31, 2011, 2012 and 2013, the Company contributed $777,000, $571,000 and $533,000 respectively, to the MannKind Retirement Plan.

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15. Income taxes

There is no provision for income taxes because the Company has incurred operating losses since inception. At December 31, 2013, the Company has concluded that it is more likely than not that the Company may not realize the benefit of its deferred tax assets due to its history of losses. Accordingly, the net deferred tax assets have been fully reserved. The provision for income taxes consists of the following (in thousands):

	Year Ended December 31,		
	2011	2012	2013
Current			
U.S. federal	$ —	$ —	$ —
U.S. state	—	—	—
Non-U.S.	—	—	—
Total current	—	—	—
Deferred			
U.S. federal	48,643	51,540	59,379
U.S. state	8,582	9,199	7,470
Non-U.S.	—	—	—
Valuation Allowance	(57,225)	(60,739)	(66,849)
Total deferred	—	—	—
Total	$ —	$ —	$ —

Deferred income taxes reflect the tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting and income tax purposes. A valuation allowance is established when uncertainty exists as to whether all or a portion of the net deferred tax assets will be realized. Components of the net deferred tax asset as of December 31, 2012 and 2013 are approximately as follows (in thousands):

	December 31,	
	2012	2013
Deferred tax assets:		
Net operating loss carryforwards	$ 609,471	$653,896
Research and development credits	65,315	70,091
Capitalized research	31,490	30,421
Milestone Rights	—	6,608
Accrued expenses	2,922	3,578
Non-qualified stock option expense	30,928	41,219
Capitalized patent costs	6,891	7,811
Other	—	837
Depreciation	3,134	2,539
Total net deferred tax assets	750,151	817,000
Valuation allowance	(750,151)	(817,000)
Net deferred tax assets	$ —	$ —

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The Company's effective income tax rate differs from the statutory federal income tax rate as follows for the years ended December 31, 2011, 2012 and 2013:

	December 31,		
	2011	2012	2013
Federal tax benefit rate	35.0%	35.0%	35.0%
State tax benefit, net of federal benefit	—	—	—
Permanent items	—	—	—
Intercompany transfer of intellectual property	(5.0)	(4.0)	(4.3)
Valuation allowance	(30.0)	(31.0)	(30.7)
Effective income tax rate	0.0%	0.0%	0.0%

As required by ASC 740 *Income Taxes* ("ASC 740"), management of the Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets. Management has concluded, in accordance with the applicable accounting standards, that it is more likely than not that the Company may not realize the benefit of its deferred tax assets due to net losses since inception. Accordingly, the net deferred tax assets have been fully reserved. Management reevaluates the positive and negative evidence on an annual basis. During the years ended December 31, 2011, 2012 and 2013, the change in the valuation allowance was $57.2 million, $60.7 million and $66.8 million, respectively, for income taxes.

At December 31, 2013, the Company had federal and state net operating loss carryforwards of approximately $1.7 billion and $1.2 billion available, respectively, to reduce future taxable income and which will expire at various dates beginning in 2018 and 2014, respectively. As a result of the Company's initial public offering, an ownership change within the meaning of Internal Revenue Code Section 382 occurred in August 2004. As a result, federal net operating loss and credit carry forwards of approximately $216.0 million are subject to an annual use limitation of approximately $13.0 million. The annual limitation is cumulative and therefore, if not fully utilized in a year can be utilized in future years in addition to the Section 382 limitation for those years. The federal net operating losses generated subsequent to the Company's initial public offering in August 2004 are currently not subject to any such limitation as there have been no ownership changes since August 2004 within the meaning of Internal Revenue Code Section 382. At December 31, 2013, the Company had research and development credits of $45 million and $38 million for federal and state purposes, respectively. The federal credits begin to expire in 2024, and the state credits may be carried forward indefinitely.

A portion of the net operating loss carryforwards include amounts related to stock-based payment awards. Any excess tax benefits from stock-based compensation are only recognized for financial reporting purposes when income taxes payable is reduced, with a corresponding increase to additional paid-in capital.

The Company believes that its income tax filing positions and deductions will be sustained on audit and does not anticipate any adjustments that will result in a material change to its financial position. Therefore, no liabilities for uncertain income tax positions have been recorded. Tax years since 1998 remain subject to examination by the major tax jurisdictions in which the Company is subject to tax.

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16. Facility financing agreement

The components of the Facility Agreement recorded as of December 31, 2013 consist of the following (in thousands):

	December 31, 2013
2019 notes	
Principal amount	$ 120,000
Principal converted to equity	(6,500)
Debt discount-net of amortization	(10,834)
Unaccreted debt issuance expense	(366)
Net carrying amount of facility financing agreement	$ 102,300

The Company's Facility Agreement principal repayment schedule is comprised of payments beginning on the third anniversary of each issued tranche, totaling $28,375,000 annually, commencing on July 1, 2016 and ending on December 9, 2019, for a total amount of $113,500,000.

Milestone rights	
Initial milestone rights fair value	$16,276
Debt discount-net of amortization	(51)
Unaccreted debt issuance expense	(61)
Less current portion of milestone rights included in other current liabilities	(3,151)
Net carrying amount included in other liabilities	$ 13,013
Commitment Asset	
Initial commitment asset fair value	$ 13,393
Less Tranche 2 portion of commitment asset	(3,656)
Less Tranche 3 portion of commitment asset	(4,580)
Commitment asset value included in other assets	$ 5,157

Accretion of debt issuance cost and debt discount in connection with the Deerfield financing during the three and twelve months ended December 31, 2013 are as follows (in thousands).

	Three months ended December 31, 2013	Twelve months ended December 31, 2013
Accretion expense- debt issuance cost	$ 34	$ 42
Accretion expense- debt discount	$ 923	$ 1,113

On July 1, 2013, the Company entered into the Facility Agreement providing for the sale of up to $160.0 million of 2019 notes to Deerfield in four equal tranches of $40.0 million principal amount. The 2019 notes accrue interest at a rate of 9.75% per annum until maturity in 2019 or their earlier repayment, repurchase, or conversion. A portion of the principal amount of the 2019 notes was converted into shares of the Company's common stock as described under "Conversion Option" below.

Deerfield purchased the first tranche of 2019 notes (the "Tranche 1notes") and Milestone Rights (as defined below) in the aggregate principal amount of $40.0 million on July 1, 2013. The closing of the second tranche of 2019 notes (the "Tranche 2 notes"), which was subject to achievement and reporting of certain results from the Company's two Phase 3 clinical studies of AFREZZA, occurred on September 5, 2013. Deerfield's purchase of the third tranche of 2019 notes occurred on December 9, 2013 (the "Tranche 3 Notes"), and was subject to the

repayment of the 2013 notes with the funds made available by the purchase of these 2019 notes. Deerfield's obligation to purchase the fourth tranche of 2019 notes is subject to receipt of marketing approval of AFREZZA by the FDA and the shares of common stock issuable upon conversion of all previously sold 2019 notes being freely tradable pursuant to an effective registration statement filed with the SEC or pursuant to Rule 144 under the Securities Act.

The Company is required to repay 25% of the original principal amount of the 2019 notes sold in each tranche on the third, fourth, fifth and sixth anniversaries of the applicable issue dates of such 2019 notes; provided that the entire outstanding principal amount of all 2019 notes will become due and payable no later than December 31, 2019. The Company is required to repay any outstanding 2019 notes in full if the Company completes certain Major Transactions (as defined in the Facility Agreement), which include, but are not limited to, certain mergers and other change of control transactions involving the Company.

The Facility Agreement includes customary representations, warranties and covenants, including, a restriction on the incurrence of additional indebtedness, and a financial covenant which requires the Company's cash and cash equivalents, which includes available borrowings on the principal stockholder note, on the last day of each fiscal quarter to not be less than $25.0 million. As discussed in Note 1 — Basis of Presentation, the Company will need to raise additional capital to support its current operating plans. Due to the uncertainties related to maintaining sufficient resources to comply with the aforementioned covenant, the 2019 notes have been classified as current liabilities in the accompanying balance sheet as of December 31, 2013. In the event of non-compliance, there can be no assurances that the holders of the 2019 notes will not exercise remedies available to them, which may include, among other things, the issuance of a notice of acceleration.

In connection with the issuance of the Tranche 1 notes and Milestone Rights on July 1, 2013, the Company recorded $52.9 million in value received, which consisted of $39.5 million in cash from the issuance of the Tranche 1 notes plus a Commitment asset (as described further below) with a fair value equal to $13.4 million. In exchange, the Company issued to Deerfield the Tranche 1 notes and Milestone Rights with estimated fair values equal to $37.1 million and $16.3 million, respectively. The Tranche 1 notes, the Milestone Rights and the Commitment Asset were initially recorded at fair value.

The Tranche 1 notes are classified as short-term debt and are subsequently accounted for at amortized cost. The effective interest rate on the Tranche 1 notes is 12.19% and a debt discount of approximately $3.3 million recognized on the Tranche 1 notes is being amortized to interest expense over the term of the Tranche 1 notes using the effective interest method.

In accordance with the Facility Agreement, the Company reimbursed Deerfield $500,000 for a portion of documented expenses for attorneys, accountants and other professional advisors, and other out-of-pocket expenses Deerfield incurred in connection with the transaction. These costs were allocated between the 2019 notes and the Milestone Rights based upon their relative fair value resulting in $448,737 being allocated to the 2019 notes and included within the debt discount with the remainder being allocated to the Milestone Rights. In addition, the Company incurred a total of $597,529 in debt issuance costs, of which $536,266 was allocated to the 2019 notes and the remainder to the Milestone Rights using the relative fair value allocation method. A portion of the debt issuance costs, or $128,008, related to the fourth tranche of 2019 notes are included in other assets.

The Commitment Asset represents the right to receive additional funding under the second, third and fourth tranches of the Facility Agreement. The fair value of the Commitment Asset was estimated using the income approach by estimating the fair value of the future tranches using a market debt rate commensurate with the risk of the future tranches and the fair value of the cash expected to be received by the Company and assessing the probability of the commitments being funded in the future. The Commitment Asset will not be subsequently remeasured but it will be monitored for impairment until future tranches of 2019 notes are drawn. Upon the

drawing of additional tranches of 2019 notes, the portion of the Commitment Asset related to such tranche will be derecognized resulting in a debt discount being recorded on the additional tranches of 2019 notes issued. If the additional funding under the fourth tranche ceases to be probable of occurring, the Commitment Asset will be impaired and will be written off as an expense in the Statement of Operations.

Upon the issuance of the Tranche 2 notes, the portion of the Commitment Asset attributed to the Tranche 2 Notes was derecognized and recorded as a debt discount to the Tranche 2 notes. Therefore, the Tranche 2 notes were recorded as short-term debt for the $40.0 million received, less a $3.7 million debt discount. The effective interest rate on the Tranche 2 notes is 12.45% and the debt discount is being amortized over the term of the Tranche 2 notes using the effective interest method.

Upon the issuance of the Tranche 3 notes, the portion of the Commitment Asset attributed to the Tranche 3 Notes was derecognized and recorded as a debt discount to the Tranche 3 notes. Therefore, the Tranche 3 notes were recorded as short-term debt for the $40.0 million received, less a $5.0 million debt discount. The effective interest rate on the Tranche 3 notes is 13.49% and the debt discount is being amortized over the term of the Tranche 3 notes using the effective interest method.

Milestone Rights

In connection with the execution of the Facility Agreement, on July 1, 2013, the Company issued Milestone Rights to the Milestone Purchasers. The Milestone Rights provide the Milestone Purchasers certain rights to receive payments of up to $90.0 million upon the occurrence of specified strategic and sales milestones, including the first commercial sale of an AFREZZA product and the achievement of specified net sales figures. The payments due under the Milestone Rights are subject to pro rata reduction in the event of certain funding failures by Deerfield under the Facility Agreement.

The Milestone Agreement includes customary representations and warranties and covenants by the Company, including restrictions on transfers of intellectual property related to AFREZZA. The Milestone Rights are subject to acceleration in the event the Company transfers its intellectual property related to AFREZZA in violation of the terms of the Milestone Agreement.

The Company analyzed the Milestone Rights under the provisions of ASC 815 Derivatives and Hedging and determined that the instruments do not meet the definition of a freestanding derivative. Since the Company has not elected to apply the fair value option to the Milestone Rights, the Company has initially recorded the Milestone Rights at their estimated fair value and accounted for the Milestone Rights as a liability by applying the indexed debt guidance contained in paragraphs ASC 470-10-25-3 and 35-4.

The initial fair value estimate of the Milestone Rights was calculated using the income approach in which the cash flows associated with the specified contractual payments were adjusted for both the expected timing and the probability of achieving the milestones discounted to present value using a selected market discount rate. The Milestone Rights were initially recorded as a short-term liability equal to $3.2 million included in Accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheet and a long term liability equal to $13.1 million included in Other liabilities. In determining the fair value of the Milestone Rights, the 13 individual milestone payments were adjusted for both (i) the expected timing and (ii) the probability of achieving the milestones, and then discounted to present value using a discount rate of 17.5%. Once the initial valuation of each specified milestone payment was determined, the individual milestone payments were then aggregated to arrive at a total fair value of $16.3 million. The discount rate was based on the estimated cost of equity which was derived using the capital asset pricing model. In addition, a 5% risk premium was added to the computation of the cost of equity to adjust for non-systemic risk factors, such as the Company’s lack of product diversification and history of financial losses, which were not captured in other model inputs.

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The Milestone Rights liability will be remeasured as the specified milestone events are achieved. Specifically, as each milestone event is achieved, the portion of the initially recorded Milestone Rights liability that pertains to such milestone event being achieved will be remeasured to the amount of the related milestone payment. The resulting change in the balance of the Milestone Rights liability due to such remeasurement will be recorded in the Company's Statement of Operations as interest expense. Furthermore, the Milestone Rights liability will be reduced upon each such milestone payment being paid. As a result, each milestone payment would be effectively allocated between a reduction of the initially recorded Milestone Rights liability and an expense representing a return on a portion of the Milestone Rights liability paid to the Milestone Purchasers for the achievement of the related milestone event.

The Company identified and evaluated a number of embedded features in the Milestone Rights to determine if they represented embedded derivatives requiring bifurcation and separate accounting pursuant to ASC 815. There were no features in the Milestone Rights that required bifurcation and separate accounting

Security Agreement

In connection with the Facility Agreement, the Company and its subsidiary, MannKind LLC, entered into a Guaranty and Security Agreement (the "Security Agreement") with Deerfield and HS (collectively, the "Purchasers"), pursuant to which the Company and MannKind LLC each granted the Purchasers a security interest in substantially all of their respective assets, including respective intellectual property, accounts, receivables, equipment, general intangibles, inventory and investment property, and all of the proceeds and products of the foregoing. The Security Agreement includes customary covenants by the Company and MannKind LLC, remedies of the Purchasers and representations and warranties by the Company and MannKind LLC. The security interests granted by us and MannKind LLC will terminate upon repayment of the 2019 notes and tranche B notes, if applicable (see Note 18), in full. Our obligations under the Facility Agreement and the Milestone Agreement are also secured by certain mortgages on the Company's facilities in Danbury, Connecticut and Valencia, California.

Registration Rights Agreement

In connection with the Facility Agreement and the sale of the 2019 notes pursuant thereto, the Company entered into a Registration Rights Agreement with Deerfield (the "Registration Rights Agreement"), pursuant to which the Company agreed to register for sale, the shares issuable upon conversion of the 2019 notes within a specified time period following the issuance of each tranche of 2019 notes.

Pursuant to the Registration Rights Agreement, the number of aggregate shares of Common Stock included in the initial mandatory registration statement was 12.0 million shares (subject to adjustment in the event of a stock split, stock combination, reclassification, payment of stock dividends, recapitalization, or other similar transactions). (See Note 18.)

In the event the Company is unable to meet certain requirements of the Registration Rights Agreement specifically related to the filing of the registration statement within specified periods, using its best efforts to obtain effectiveness of the registration statement, or maintaining the effectiveness of the registration statement, the Company will be required to pay additional damages to Deerfield. The additional damages are calculated as 1% of Deerfield's original principal amount of the relevant tranche of 2019 notes and shall accrue until the earlier of (i) the date on which the registration failure has been cured and (ii) the date on which the shares issuable upon conversion may be disposed of by Deerfield.

In accordance with the accounting guidance contained in ASC 825-20, the contingent obligation to make future payments, or otherwise transfer consideration, under a registration payment arrangement should be recognized and measured in accordance with ASC 450-20. ASC 450-20 requires an accrual to be recorded for a

contingent payment if it is both probable of occurring and the amount of the payment can be reasonably estimated. As of December 31, 2013, the Company determined that it is not probable that it will be obligated to pay additional damages to Deerfield pursuant to the Registration Rights Agreement, and therefore no accrual for such contingent payment has been recorded.

Embedded Derivatives

The Company identified and evaluated a number of embedded features in the notes issued under the Facility Agreement to determine if they represented embedded derivatives requiring bifurcation and separate accounting pursuant to ASC 815. In the Tranche 1 notes, we determined that the Contingent Prepayment Option and Tax Gross-Up features were embedded derivatives requiring bifurcation from the Tranche 1 notes. These features were evaluated by the Company and deemed to have a de-minimus value. Based on our analysis of the Tranche 2 notes, only one feature (the Tax Gross-Up) was required to be bifurcated. Similar to the conclusions reached in our analysis of the embedded features contained in the Tranche 1 notes, the Tax Gross-Up feature was deemed to have a de-minimus value. In analyzing the Tranche 3 notes, we identified four embedded features that required bifurcation and separate accounting and the Company determined that they should be bundled together as a single, compound embedded derivative, bifurcated from the host contract, and accounted for at fair value, with changes in fair value being recorded in the Statement of Operations. The four embedded derivatives contained in the Tranche 3 notes were the Conversion Option, Major Transaction Put Option, Acceleration upon a Legal Judgment Against the Company in Excess of $100,000, and Tax Gross-Up. The four embedded features, discussed in detail below, were evaluated together as a single compound derivative to determine the fair value of the derivative with the exception of the Tax Gross-Up feature which was deemed to have a de-minimus value. At the time of the issuance of Tranche 3, management determined that the value of these embedded derivatives at December 9, 2013, and at December 31, 2013 was immaterial.

Conversion Option

As of December 31, 2013, a portion of the 2019 notes was convertible into fully paid shares of the Company's common stock from and after the 11 th trading day following the public release, by the Company, of the Phase III data for the Product and until the second business day immediately prior to the final payment date, at a conversion price equal to the volume weighted average price ("VWAP") per share of the stock during the 20 trading days immediately preceding the Purchaser's election to convert. The number of Conversion Shares issuable upon a conversion shall be determined by dividing the Conversion Amount by the Conversion Price.

The number of shares issuable upon conversion of the 2019 notes was limited to the extent that Deerfield would otherwise acquire shares, that would cause the beneficial ownership of Deerfield and their affiliates to exceed 9.985% of the total number of shares of Common Stock then issued and outstanding.

The 2019 notes provided that Deerfield may exercise this conversion right for (i) up to 12.0 million shares of stock if the Conversion Price is $3.33 per share or less, (ii) up to 6.0 million shares of stock if the Conversion Price is $6.67 per share or more, and (iii) up to $40.0 million of principal if the Conversion Price is between $3.33 and $6.67 per share (collectively, the "Applicable Limits").

As of December 31, 2013, Deerfield had converted $6.5 million principal amount of the 2019 notes to equity, resulting in an issuance of 1,293,224 shares of the Company's common stock. Upon the conversion, the principal balance of the notes were recorded in equity and the loss was recognized in the Statement of Operations for the difference between the principal amount of the notes converted and their carrying amount (which included unamortized discount and debt issuance costs).

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Major Transaction Put Option

The Facility Agreement requires that the Company give Deerfield notice of a Major Transaction at least 20 days prior to the anticipated effective date for such transaction, or if the Company has outstanding any class of publicly traded securities, not later than 2 business days following the public announcement thereof. Upon receiving such notice, if the successor entity does not meet the Qualification Criteria, then the Purchasers may exercise the put option, in their sole discretion, requiring the Company to repay the notes in full at an amount equal to the sum of the outstanding principal amount of the notes plus all interest accrued and unpaid on such date. Furthermore, in the event that the Purchaser exercises their rights under the Major Transaction Put Option, the obligations under the Milestone Agreement shall not terminate.

Acceleration upon a Legal Judgment Against the Company in Excess of $100,000

The Facility Agreement contains various events of default, including an event of default triggered in the event that a legal judgment is made against the Company in excess of $100,000, and the judgment remains unstayed on the appeal, undischarged, unbounded or undismissed for a period of 90 days from the date of judgment. Upon the occurrence and during the continuance of an event of default, the note holders have the option to cause the outstanding principal amount of the 2019 notes plus all accrued and unpaid interest to become immediately due and payable.

Tax Gross-Up

The Facility Agreement requires that if the Company is required by law to deduct any tax from any amount payable under the Agreement or any other Transaction Document, then the sum payable shall be increased by as much as necessary to compensate for such deduction. In addition, the Company will reimburse Deerfield for any future stamp or documentary taxes, or similar other charges or levies, incurred by Deerfield. The tax gross-up obligations do not apply to any payments under the Milestone Agreement.

17. Selected quarterly financial data (unaudited)

The following unaudited selected quarterly financial data has been prepared on the same basis as the audited information and includes all adjustments necessary to present fairly the information set forth in the Company's consolidated financial statements and notes herein. As a development stage enterprise, the Company has experienced fluctuations in its quarterly results related to the development of its lead product candidate, AFREZZA, and in its expansion of the product candidate portfolio. The Company expects these fluctuations to continue in the future. Due to these and other factors, the quarterly operating results are not indicative of the Company's future performance.

	March 31	June 30	September 30	December 31
	(In thousands, except per share data)			
2012				
Net loss	$ (38,173)	$ (36,578)	$ (42,834)	$ (51,781)
Net loss applicable to common stockholders	$ (38,173)	$ (36,578)	$ (42,834)	$ (51,781)
Net loss per share applicable to common stockholders — basic and diluted	$ (0.27)	$ (0.23)	$ (0.22)	$ (0.23)
Weighted average common shares used to compute basic and diluted net loss per share applicable to common stockholders	143,154	159,859	190,534	229,234

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	March 31	June 30	September 30	December 31
	(In thousands, except per share data)			
2013				
Net loss	$ (40,965)	$ (46,124)	$ (50,818)	$ (53,582)
Net loss applicable to common stockholders	$ (40,965)	$ (46,124)	$ (50,818)	$ (53,582)
Net loss per share applicable to common stockholders — basic and diluted	$ (0.15)	$ (0.16)	$ (0.17)	$ (0.16)
Weighted average common shares used to compute basic and diluted net loss per share applicable to common stockholders	280,058	284,044	296,386	337,284

18. Subsequent Event

In January 2014, Deerfield elected to convert an aggregate of $33.5 million of principal amount of the Tranche 2 Notes, pursuant to which the Company issued Deerfield 6,559,251 shares of the Company's common stock. As a result of this election, Deerfield has fully exercised the conversion option under the 2019 notes by converting all of the Tranche 2 Notes, or $40.0 million of principal, into 7,852,475 shares of the Company's common stock in the aggregate.

On February 28, 2014, the Company entered into a First Amendment to Facility Agreement and Registration Rights Agreement with Deerfield to provide for the issuance of tranche B notes to Deerfield in a maximum principal amount equal to (x) if the FDA approves the NDA for AFFREZZA and Deerfield purchased the fourth tranche of 2019 notes, 150% of the aggregate principal amount of the 2019 notes that Deerfield has converted into the Company's common stock on and after the effective date of the amendment, up to $90.0 million, and (y) otherwise, 33.33% of the aggregate principal amount of the 2019 notes that Deerfield has converted into the Company's common stock on and after the effective date of the amendment, up to $20.0 million, in each case subject to the satisfaction of certain other conditions. Any tranche B notes, if and when issued, would bear interest at the rate of 9.75% per year, subject to reduction to 8.75% if the Company enters into a collaboration with a third party to commercialize AFFREZZA, on the outstanding principal amount, payable in cash quarterly in arrears on the last business day of December, March, June and September of each year. The Company is required to repay 25% of the original principal amount of any tranche B notes on the third, fourth, fifth and sixth anniversaries of the applicable issue dates of such notes, provided that the entire outstanding principal amount of all tranche B notes will become due and payable no later than December 31, 2019. The tranche B notes will be prepayable without penalty or premium commencing two years after issuance thereof.

In addition, pursuant to the amendment, the outstanding 2019 notes held by Deerfield were amended and restated such that Deerfield may, subject to certain limitations, convert up to an additional $60.0 million principal amount under such 2019 notes into common stock after the effective date of the amendment. Pursuant to the amendment, the Company also amended its Registration Rights Agreement with Deerfield dated July 1, 2013 and agreed to register for resale up to 12,000,000 shares of common stock issuable upon conversion of the outstanding 2019 notes, as amended and restated, as of the date of the amendment, with a minimum conversion price of $5.00 per share unless the Company otherwise consents. The conversion price will be determined by the average of the volume weighted average prices per share during the three trading days immediately preceding the election to convert.

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On March 3, 2014, the Company entered into two At-The-Market Issuance Sales Agreements (the "ATM Agreements"), one with MLV & Co. LLC ("MLV"), and one with Meyers Associates, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P.) ("Brinson Patrick"), pursuant to which the Company may issue and sell its common stock having aggregate sales proceeds of up to $50.0 million from time to time through MLV or Brinson Patrick, acting as the Company's sales agents. The Company currently anticipates that all or substantially all sales of common stock under the ATM Agreements will be made in "at the market" offerings as defined in Rule 415 of the Securities Act of 1933, as amended. The Company has not yet sold or issued any shares of its common stock under the ATM Agreements.

THIS NOTE IS BEING ISSUED WITH ORIGINAL ISSUE DISCOUNT ("OID"). THE FOLLOWING INFORMATION IS BEING PROVIDED PURSUANT TO TREASURY REGULATION SECTION 1.1275-3:

ISSUE PRICE: $

AMOUNT OF OID: $

ISSUE DATE:

YIELD TO MATURITY:

THE SECURITY REPRESENTED BY THIS CERTIFICATE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, OR APPLICABLE STATE SECURITIES LAWS. THIS SECURITY MAY NOT BE SOLD, TRANSFERRED OR ASSIGNED, PLEDGED, HYPOTHECATED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER SAID ACT, OR PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER SAID ACT INCLUDING, WITHOUT LIMITATION, PURSUANT TO RULE 144 UNDER SAID ACT."

AMENDED AND RESTATED SENIOR SECURED CONVERTIBLE NOTE

Issuance Date: [July 1] [December 9], 2013 Principal: U.S. $[ ]

FOR VALUE RECEIVED, MANNKIND CORPORATION, a Delaware corporation (the "**Company**"), hereby promises to pay to [ ], or its registered assigns (the "**Holder**") the principal amount of [ ] Dollars ($[ ]) (the "**Principal**") pursuant to, and in accordance with, the terms of that certain Facility Agreement, dated as of July 1, 2013, as amended on February 28, 2014, by and among the Company and the Purchasers party thereto (together with all exhibits and schedules thereto and as may be amended, restated, modified and supplemented from time to time, the "**Facility Agreement**"). The Company hereby promises to pay accrued and unpaid Interest (as defined below) and premium, if any, on the Principal on the dates, at the rates and in the manner provided for in the Facility Agreement. This Senior Secured Convertible Note (including all Senior Secured Convertible Notes issued in exchange, transfer or replacement hereof, and as any of the foregoing may be amended, restated, supplemented or otherwise modified from time, this "**Note**") is one of the Senior Secured Convertible Notes issued pursuant to the Facility Agreement (collectively, including Senior Secured Convertible Notes to be issued pursuant to the Facility Agreement in the future, all Senior Secured Convertible Notes issued in exchange, transfer or replacement thereof, as well as any of the foregoing may be amended, restated, supplemented or otherwise modified from time to time, the " **Notes**"). All capitalized terms used and not otherwise defined herein shall have the respective meanings set forth in the Facility Agreement.

Except as expressly provided in the Facility Agreement, the Company has no right, but under certain circumstances may have an obligation, to make payments of Principal prior to the Final Payment Date. At any time an Event of Default exists, the Principal of this Note, together with all accrued and unpaid Interest and any applicable premium due, if any, may be declared, or shall otherwise become, due and payable in the manner, at the price and with the effect provided in the Facility Agreement.

1. Definitions.

(a) Certain Defined Terms. For purposes of this Note, the following terms shall have the following meanings:

(i) "**Affiliate**" means any person or entity that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a person or entity, as such terms are used in and construed under Rule 144 under the Securities Act. With respect to a Holder, any investment fund or managed account that is managed on a discretionary basis by the same investment manager as such Holder will be deemed to be an Affiliate of such Holder. As used in this definition of "Affiliate," the term "control" means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through ownership of voting securities or partnership or other ownership interest, by contract, or otherwise.

(ii) "**Conversion Amount**" means the Principal amount to be converted.

(iii) "**Conversion Commencement Date**" means the eleventh full Trading Day following the public release by the Company of Phase III Data for the Product.

(iv) "**Conversion Price**" means, as of any Conversion Date the average of the Volume Weighted Average Prices per Share for the three (3) Trading Day period immediately preceding the Conversion Date (the " **Measurement Period**"), provided, that in the event that a stock split, stock combination, reclassification, payment of stock dividend, recapitalization or other similar transaction of such character that the Shares shall be changed into or become exchangeable for a larger or small number of shares (a " **Stock Event**") is consummated during the Measurement Period, the Volume Weighted Average Price for all Trading Days during the Measurement Period prior to the effectiveness of the Stock Event shall be appropriately adjusted to reflect such Stock Event.

(v) "**Interest**" means any interest (including any default interest) accrued on the Principal pursuant to the terms of this Note and the Facility Agreement.

(vi) "**Issuance Date**" means [July 1] [December 9], 2013, regardless of any exchange or replacement hereof.

(vii) "**Major Pharmaceutical Company**" means any Person engaged in the pharmaceutical or biotechnology industry who, for the immediately preceding fiscal year, had total revenues in excess of $2,000,000,000 (or its equivalent in another currency).

(viii) "**Market Disruption Event**" means, with respect to any trading day and any security, (a) a failure by the Principal Market to open for trading during its entire regular trading session, (b) the occurrence or existence prior to 1:00 p.m., New York City time, on such day for such securities for more than one half-hour period in the aggregate during regular trading hours of any suspension or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the relevant securities exchange or otherwise) in such securities or in any options, contracts or future contracts relating to such securities, or (c) to the extent "Volume Weighted Average Price" is determined in accordance with clause (b) of the definition thereof, the suspension of trading for the one-half hour period ending on the scheduled close of trading on such day (by reason of movements in price exceeding limits permitted by the stock exchange or otherwise) in such securities.

(ix) "**Principal**" means the outstanding principal amount of this Note as of any date of determination.

(x) "**Registration Failure**" means that (A) the Company fails to file with the SEC on or before the Filing Deadline (as defined in the Registration Rights Agreement) any Registration Statement required to be filed pursuant to Section 2(a) of the Registration Rights Agreement registering Conversion Shares, (B) the Company fails to use its best efforts to obtain effectiveness with the SEC, prior to the Registration Deadline (as defined in the Registration Rights Agreement), of any Registration Statement (as defined in the Registration Rights Agreement) that is required to be filed pursuant to Section 2(a) of the Registration Rights Agreement registering Conversion Shares, or fails to use its best efforts to keep such Registration Statement current and effective as required in Section 3 of the Registration Rights Agreement, (C) the Company fails to file any additional Registration Statements required to be filed pursuant to Section 2(a)(ii) of the Registration Rights Agreement registering Conversion Shares on or before the Additional Filing Deadline or fails to use its best efforts to cause such new Registration Statement to become effective on or before the Additional Registration Deadline, (D) any Registration Statement required to be filed under the Registration Rights Agreement registering Conversion Shares, after its initial effectiveness and during the Registration Period (as defined in the Registration Rights Agreement), lapses in effect or sales of any Conversion Shares constituting Registrable Securities (as defined in the Registration Rights Agreement) cannot otherwise be made thereunder (whether by reason of the Company's failure to amend or supplement the prospectus included therein in accordance with the Registration Rights Agreement, the Company's failure to file and to obtain effectiveness with the SEC of an additional Registration Statement registering Conversion Shares or amended Registration Statement required pursuant to Sections 2(a)(ii) or 3(b) of the Registration Rights Agreement, as applicable, or otherwise), other than in each case as permitted pursuant to Section 3(q) of the Registration Rights Agreement.

(xi) "**Required Note Holders**" means Holders of at least 51% in interest of the Notes.

(xii) "**Shares**" means shares of Common Stock, $0.01 par value.

(xiii) "**Trading Day**" means any day on which the Common Stock is traded for any period on the Principal Market; provided that for purposes of the definition of "Conversion Shares", Trading Day shall not include any Trading Day on which there is a Market Disruption Event.

(xiv) "**Volume Weighted Average Price**" for any security as of any Trading Day means (a) the volume weighted average sale price of such security on the principal U.S. national or regional securities exchange on which such security is traded as reported by Bloomberg Financial Markets or an equivalent, reliable reporting service mutually acceptable to and hereinafter designated by the Required Note Holders and the Company (" **Bloomberg**") or (b), if no volume weighted average sale price is reported for such security, then the closing price per share of such security, or, if no closing price per share is reported for such security by Bloomberg, the average of the last bid and last ask price (or if more than one in either case, the average of the average last bid and average last ask prices) on such Trading Day as reported in the composite transactions for the principal U.S. national or regional securities exchange on which such security is traded. If the security is not listed for trading on a U.S. national or regional securities exchange on the relevant Trading Day, then the Volume Weighted Average Price will be the average of the mid-point of the last bid and last ask prices of the security in the over-the-counter market on the relevant Trading Day as reported by the OTC Markets Group, Inc. or similar organization. If the Volume Weighted Average Price cannot be calculated for such security on such date in the manner provided above, the Volume Weighted Average Price shall be the fair market value as mutually determined by the Company and the Holders of a majority in interest of the Notes being converted for which the calculation of the Volume Weighted Average Price is required in order to determine the Conversion Price of such Notes. Volume Weighted Average Price will be determine without regard to after-hours trading or any other trading outside of the regular trading hours.

2. Conversion Rights. This Note may be converted into Shares on the terms and conditions set forth in this Section 2.

(a) Conversion at Option of the Holder. On and after the Conversion Commencement Date and until the close of business on the second business day immediately prior to the Final Payment Date, the Holder shall be entitled to convert all or any part of the Principal into fully paid and nonassessable Shares (the "**Conversion Shares**") in accordance with this Section 2 at the Conversion Rate (as defined in Section 2(b)); provided that, unless otherwise agreed to by the Company, the Holder shall not be entitled to convert any Principal if the Conversion Price is less than $5.00 per Share [or if the Tranche 3 Notes (as defined in the Facility Agreement) have not been converted in full] [1]. The Company shall not issue any fraction of a Share upon any conversion. If the issuance would result in the issuance of a fraction of a Share, then the Company shall round such fraction of a Share up or down to the nearest whole share (with 0.5 rounded up).

[1] Include bracketed language in the Tranche 1 Notes only.

(b) Conversion Rate. The number of Conversion Shares issuable upon a conversion of any portion of this Note pursuant to Section 2 shall be determined according to the following formula (the "**Conversion Rate**"):

$$\frac{\text{Conversion Amount}}{\text{Conversion Price}}$$

(c) Mechanics of Conversion. The conversion of this Note shall be conducted in the following manner:

(i) Holder's Delivery Requirements. To convert a Conversion Amount into Conversion Shares on any date (the "**Conversion Date**"), the Holder shall (A) transmit by facsimile or electronic mail (or otherwise deliver), for receipt on or prior to 5:00 p.m. New York City time on such date, a copy of an executed conversion notice in the form attached hereto as Exhibit A (the "**Conversion Notice**") to the Company (Attention: Matthew Pfeffer, Fax: (661) 775-2099, Email: mpfeffer@mannkindcorp.com), and (B) if required by Section 2(c)(vi), surrender to a common carrier for delivery to the Company, no later than three (3) Business Days after the Conversion Date, the original Note being converted (or an indemnification undertaking in customary form with respect to this Note in the case of its loss, theft or destruction).

(ii) Company's Response. Upon receipt or deemed receipt by the Company of a copy of a Conversion Notice, the Company (I) shall immediately send, via facsimile, a confirmation of receipt of such Conversion Notice to the Holder and the Company's designated transfer agent (the "**Transfer Agent**"), which confirmation shall constitute an instruction to the Transfer Agent to process such Conversion Notice in accordance with the terms herein and (II) on or before the second (2nd) Business Day following the date of receipt or deemed receipt by the Company of such Conversion Notice (the "**Share Delivery Date**") (A) provided that the Transfer Agent is participating in The Depository Trust Company ("**DTC**") Fast Automated Securities Transfer Program and provided that the Holder is eligible to receive Shares through DTC, credit such aggregate number of Conversion Shares to which the Holder shall be entitled to the Holder's or its designee's balance account with DTC through its Deposit Withdrawal Agent Commission system, or (B) if the foregoing shall not apply, issue and deliver to the address as specified in the Conversion Notice, a stock certificate, registered in the name of the Holder or its designee, for the number of Conversion Shares to which the Holder shall be entitled. If notwithstanding the provisions of Section 2(c)(vi), the Holder elects to physically surrender this Note for conversion and the Principal represented by this Note is greater than the Principal being converted, then the Company shall, as soon as practicable and in no event later than three (3) Business Days after receipt of this Note (the "**Note Delivery Date**") and at its own expense, issue and deliver to the Holder a new Note representing the Principal not converted and cancel this Note. The Conversion Shares will be freely transferable and will not contain a legend restricting the resale or transferability of the Conversion Shares if the Unrestricted Conditions (as defined below) are met.

(iii) Dispute Resolution. In the case of a dispute as to the determination of the Conversion Price or the arithmetic calculation of the Conversion Rate, the Company shall instruct the Transfer Agent to issue to the Holder the number of Conversion

Shares that is not disputed and shall transmit an explanation of the disputed determinations or arithmetic calculations to the Holder via facsimile within two (2) Business Days of receipt or deemed receipt of the Holder's Conversion Notice or other date of determination. If the Holder and the Company are unable to agree upon the determination of the Conversion Price or arithmetic calculation of the Conversion Rate within one (1) Business Day of such disputed determination or arithmetic calculation being transmitted to the Holder, then the Company shall promptly (and in any event within two (2) Business Days) submit via facsimile (A) the disputed determination of the Conversion Price to an independent, reputable investment banking firm agreed to by the Company and the Required Note Holders, or (B) the disputed arithmetic calculation of the Conversion Rate to the Company's independent registered public accounting firm, as the case may be. The Company shall direct the investment bank or the accounting firm, as the case may be, to perform the determinations or calculations and notify the Company and the Holder of the results no later than two (2) Business Days from the time it receives the disputed determinations or calculations. Such investment bank's or accounting firm's determination or calculation, as the case may be, shall be binding upon all parties absent manifest error.

(iv) Record Holder. The person or persons entitled to receive the Conversion Shares issuable upon a conversion of this Note shall be treated for all purposes as the legal and record holder or holders of such Shares on the Conversion Date, or in the case of Conversion Shares the issuance of which is subject to a *bona fide* dispute that is subject to and being resolved pursuant to, and in compliance with the time periods and other provisions of, the dispute resolution provisions of Section 2(c)(iii), the first Business Day after the resolution of such *bona fide* dispute and the fees and expenses of such investment bank or accountant shall be paid by the Company.

(v) Company's Failure to Timely Convert.

(A) Cash Damages. If within three (3) Business Days after the Company's receipt of the facsimile or electronic mail copy of a Conversion Notice or deemed receipt of a Conversion Notice the Company shall fail to issue and deliver a certificate to the Holder for, or credit the Holder's or its designee's balance account with DTC with, the number of Conversion Shares (free of any restrictive legend if the Unrestricted Conditions (as defined below) are met) to which the Holder is entitled upon the Holder's conversion of any Conversion Amount (a " **Delivery Failure**") then in addition to all other available remedies that the Holder may pursue hereunder and under the Facility Agreement, the Company shall pay additional damages to the Holder for each day after the Share Delivery Date such conversion is not timely effected in an amount equal to one percent (1%) of the product of (I) the number of Conversion Shares not issued to the Holder or its designee on or prior to the Share Delivery Date and to which the Holder is entitled and (II) the Volume Weighted Average Price of the Common Stock on the Share Delivery Date (such product is referred to herein as the " **Share Product Amount**") Alternatively in lieu of the foregoing damages, subject to Section 2(c)(iii), at the written election of the Holder made in the Holder's sole discretion, if, on or after the applicable Conversion Date, the Holder purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by such Holder of Conversion Shares that such Holder anticipated receiving from the Company (such purchased shares, " ***Buy-In Shares***"), the Company shall be obligated to promptly pay to such Holder (in addition to all other available

remedies that the Holder may otherwise have), 107.5% of the amount by which (A) such Holder's total purchase price (including brokerage commissions, if any) for such Buy-In Shares exceeds (B) the net proceeds received by such Holder from the sale of the number of shares equal to up to the number of Conversion Shares such Holder was entitled to receive but had not received on such Share Delivery Date. If the Company fails to pay the additional damages set forth in this Section 2(c)(v)(A) within five (5) Business Days of the date incurred, then the Holder entitled to such payments shall have the right at any time, so long as the Company continues to fail to make such payments, to require the Company, upon written notice, to immediately issue, in lieu of such cash damages, the number of Shares equal to the quotient of (X) the aggregate amount of the damages payments described herein divided by (Y) the Conversion Price specified by the Holder in the Conversion Notice.

(B) Void Conversion Notice. If for any reason the Holder has not received all of the Conversion Shares prior to the tenth (10th) Business Day after the Share Delivery Date with respect to a conversion of this Note (a " **Conversion Failure**"), then the Holder, upon written notice to the Company (a "**Void Conversion Notice**"), may void its Conversion Notice with respect to, and retain or have returned, as the case may be, any portion of this Note that has not been converted pursuant to the Holder's Conversion Notice; provided, that the voiding of the Holder's Conversion Notice shall not affect the Company's obligations to make any payments that have accrued prior to the date of such notice pursuant to Section 2(c)(v)(A) or otherwise.

(vi) Book-Entry. Notwithstanding anything to the contrary set forth herein, upon conversion or repayment of this Note in accordance with the terms hereof, the Holder shall not be required to physically surrender this Note to the Company unless all of the Principal is being converted or repaid. The Holder and the Company shall maintain records showing the Principal converted or repaid and the dates of such conversions or repayments or shall use such other method, reasonably satisfactory to the Holder and the Company, so as not to require physical surrender of this Note upon any such partial conversion or repayment. Notwithstanding the foregoing, if this Note is converted or repaid as aforesaid, the Holder may not transfer this Note unless the Holder first physically surrenders this Note to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Note of like tenor, registered as the Holder may request, representing in the aggregate the remaining Principal represented by this Note. The Holder and any assignee, by acceptance of this Note, acknowledge and agree that, by reason of the provisions of this paragraph, following conversion or repayment of any portion of this Note, the Principal of this Note may be less than the principal amount stated on the face hereof.

(d) Taxes. The Company shall pay any and all taxes (excluding income taxes, franchise taxes or other taxes levied on gross earnings, profits or the like of the Holder) that may be payable with respect to the issuance and delivery of Conversion Shares upon the conversion of this Note, unless the tax is due because the Holder requests any Conversion Shares to be issued in a name other than the Holder's name, in which case the Holder will pay that tax.

(e) Legends.

(i) Restrictive Legend. The Holder understands that this Note and until such time as the Conversion Shares have been registered under the Securities Act as contemplated by the Registration Rights Agreement or otherwise may be sold pursuant to Rule 144 under the Securities Act or an exemption from registration under the Securities Act without any restriction as to the number of securities as of a particular date that can then be immediately sold, the Conversion Shares, as applicable, may bear a restrictive legend in substantially the following form (and a stop-transfer order may be placed against transfer of the certificates for such securities):

> THE SECURITY REPRESENTED BY THIS CERTIFICATE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, OR APPLICABLE STATE SECURITIES LAWS. THIS SECURITY MAY NOT BE SOLD, TRANSFERRED OR ASSIGNED, PLEDGED, HYPOTHECATED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER SAID ACT, OR PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER SAID ACT INCLUDING, WITHOUT LIMITATION, PURSUANT TO RULE 144 UNDER SAID ACT."

(ii) Removal of Restrictive Legends. The certificates evidencing the Conversion Shares shall not contain any legend restricting the transfer thereof (including the legend set forth above in subsection 2(e)(i)): (A) while a registration statement (including a Registration Statement, as defined in the Registration Rights Agreement) covering the resale of such security by the Holder is effective under the Securities Act, (B) following any sale of such Conversion Shares pursuant to Rule 144, or (C) if such Conversion Shares are eligible for sale under rule 144(b)(1) and the Holder thereof is not, and has not been during the preceding three months, an affiliate (as such term is defined for purposes of Rule 144 under the Securities Act) (the " **Unrestricted Conditions**"). The Holder agrees that the removal of the restrictive legend from the Conversion Shares in accordance with the immediately preceding sentence is predicated upon the Company's reliance that (i) the Holder will dispose of such shares pursuant to the registration requirements of the Securities Act, including any applicable prospectus delivery requirements, or for its own account in compliance with Rule 144, and that if such securities are sold pursuant to a registration statement, they will be sold in compliance with the plan of distribution set forth therein, and (ii) if, prior to the disposition of any such Conversion Shares, the Company notifies the Holder that the Unrestricted Conditions have no longer been met, the Holder will agree to the placement of said restrictive legend on the certificates for such Conversion Shares until the Unrestricted Conditions have once again been met. Promptly following the Effective Date (as defined below) or such other time as any of the Unrestricted Conditions have been satisfied, the Company shall cause its counsel to issue a legal opinion or other instruction to the Transfer Agent (if required by the Transfer Agent) to effect the issuance of the Conversion Shares without a restrictive legend or, in the case of Conversion Shares that have previously been issued, the removal of the legend thereunder. If the Unrestricted Conditions are met at the time of issuance of the Conversion Shares, then the Conversion Shares shall be issued free of all legends. The Company agrees that following the Effective Date or at such time as the Unrestricted Conditions are met or such legend is otherwise no longer required under this Section 2(e), it will, no later than four (4) Trading Days following the delivery (the "**Unlegended Shares Delivery Deadline**") by the Holder to the Company or the Transfer Agent of any certificate representing Conversion Shares, as applicable, issued with a

restrictive legend (such fourth Trading Day, the "**Legend Removal Date**"), deliver or cause to be delivered to such Holder a certificate (or electronic transfer) representing such shares that is free from all restrictive and other legends. For purposes hereof, " **Effective Date**" shall mean the date that the Registration Statement that the Company is required to file pursuant to the Registration Rights Agreement has been declared effective by the SEC.

(iii) Sale of Unlegended Shares. Holder agrees that the removal of the restrictive legend from any certificates representing securities as set forth in Section 2(e) above is predicated upon the Company's reliance that the Holder will sell any Conversion Shares pursuant to either the registration requirements of the Securities Act, including any applicable prospectus delivery requirements, or an exemption therefrom, and that if such securities are sold pursuant to a Registration Statement, they will be sold in compliance with the plan of distribution set forth therein.

(f) Limitations on Conversions.

(i) Beneficial Ownership. Notwithstanding anything herein to the contrary, the Company shall not issue to the Holder, and the Holder may not acquire, a number of Shares upon conversion of this Note or otherwise issue any shares of Common Stock pursuant hereto or the Facility Agreement to the extent that, upon such conversion, the number of Shares then beneficially owned by the Holder and its Affiliates and any other persons or entities whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act (including shares held by any "group" of which the Holder is a member, but excluding shares beneficially owned by virtue of the ownership of securities or rights to acquire securities that have limitations on the right to convert, exercise or purchase similar to the limitation set forth herein) would exceed 9.985% of the total number of shares of Common Stock then issued and outstanding (the " **9.985% Cap**"), provided, however, that the 9.985% Cap shall only apply to the extent that the Common Stock is deemed to constitute an "equity security" pursuant to Rule 13d-1(i) promulgated under the Exchange Act, and provided, further, that if the Holder and its Affiliates and any other persons or entities whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act beneficially own on the Issuance Date greater than 9.985% of the shares of Common Stock then outstanding, then the 9.985% Cap shall not apply to such Holder unless and until the beneficial ownership of the Holder and its Affiliates and any other persons or entities whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act subsequently decreases to below 9.985%. For purposes hereof, "group" has the meaning set forth in Section 13(d) of the Exchange Act and applicable regulations of the Securities and Exchange Commission (" **SEC**"), and the percentage held by the Holder shall be determined in a manner consistent with the provisions of Section 13(d) of the Exchange Act. Upon the written request of the Holder, the Company shall, within two (2) Trading Days, confirm orally and in writing to the Holder the number of Shares then outstanding.

(ii) Principal Market Regulation. The Company shall not issue any Shares upon conversion of this Note (including pursuant to Section 2(c)(v)(A) hereof) if the issuance of such Shares together with any previous issuances of Shares under the Notes would exceed 57,885,577 (the "**Exchange Cap**"), except that such limitation shall not apply in the

event that the Company obtains the approval of its stockholders as required by the applicable rules of The Nasdaq Global Market and any other Principal Market for issuances of Shares in excess of such amount.

(iii) Applicable Limits on Conversion of the Note . Notwithstanding anything to the contrary herein, (A) unless otherwise agreed to by the Company, this Note shall not be convertible, and the Company shall not issue Shares upon conversion of this Note, as a Conversion Price less than $5.00 per Share, [and unless the Tranche 3 Notes have been converted in full] [2], (B) this Note shall not be convertible, and the Company shall not issue Shares upon conversion of this Note, if the number of shares that would otherwise be issuable upon such conversion, together with all shares previously issued upon conversion of all Notes or issuable upon conversion of any other Notes converted on the same Conversion Date, exceeds 30 million shares (subject to appropriate adjustment to reflect any Stock Event), and (C) this Note shall not be convertible, and the Company shall not issue Shares upon conversion of this Note, if the number of shares that would otherwise be issuable upon such conversion, together with any shares issuable upon conversion of any other Notes converted on the same Conversion Date, exceeds the then Applicable Limit. For purposes herein, "Applicable Limit" shall initially mean (x) 30 million Shares (subject to appropriate adjustment to reflect any Stock Event) for all conversions of Notes at a "Conversion Price" of $3.33 (subject to appropriate adjustment to reflect any Stock Event) or less, (y) 15 million Shares (subject to appropriate adjustment to reflect any Stock Event) for all conversions of Notes at a "Conversion Price" of $6.67 (subject to appropriate adjustment to reflect any Stock Event) or more, and (z) $100 million of "Conversion Amounts" for all Note conversions at a "Conversion Price" of between $3.33 and $6.67 (subject to appropriate adjustment to reflect any Stock Event); provided, however, that, after each Conversion Date, the Applicable Limit under all three clauses (regardless of which clause such conversion relates to) shall be reduced by an amount equal to the Applicable Limit immediately preceding such conversion multiplied by a fraction, the numerator of which is the number of Shares actually converted on such date (in the case of clauses (x) and (y)) or the applicable "Conversion Amount" for all shares actually converted on such date (in the case of clause (z)) and the denominator of which is the Applicable Limit in respect of the clause under which such conversion falls immediately prior to such conversion. For purposes of illustration: (a) If 15 million shares are converted under any Notes at $3.00 per share, the Applicable Limit shall be reduced by one-half to 15 million, 7.5 million and $50 million, respectively; (b) If an additional $10 million are then converted under any Notes at $5.00 per Share, each Applicable Limit shall then be further reduced by 20% to 12 million, 6 million and $40 million, respectively. As an additional illustration, if 10 million shares are converted under any Notes at $8.00 per share, each Applicable Limit shall be reduced by two-thirds to 10 million, 5 million and $33,333,333, respectively; and (b) if an additional 500,000 shares are then converted under any Notes at $5.00 per share, each Applicable Limit shall be further reduced by 7.5% to $9,250,000, $4,625,000 and $30,833,333, respectively.

3. Registration Failures. Upon any Registration Failure, in addition to all other available remedies that the Holder may pursue hereunder and under the Facility Agreement and the Registration Rights Agreement, the Company shall pay additional damages to the Holder for

[2] Include bracketed language in the Tranche 1 Notes only.

each 30-day period (prorated for any partial period) after the date of such Registration Failure in an amount in cash equal to one percent (1%) of such Holder's original principal amount of this Note on the date of such Registration Failure. Such payments shall accrue until the earlier of (i) such time as the Registration Failure has been cured and (ii) the date on which all of the Conversion Shares may be disposed of for such Holder's own account without restriction under Rule 144 (including, without limitation, volume restrictions and without the need for the availability of current public information under Rule 144), assuming that the Holder is not, and has not been during the preceding three months, an affiliate (as such term is defined for purposes of Rule 144 under the Securities Act) of the Company. All such payments that accrue under this Section (4) shall be payable no later than five business days following such date of accrual.

4. Voting Rights. Except as required by law, the Holder shall have no voting rights with respect to any of the Conversion Shares until the Conversion Date relating to the conversion of this Note upon which such Conversion Shares are issuable (or in the case of Conversion Shares the issuance of which is subject to a *bona fide* dispute that is subject to and being resolved pursuant to, and in compliance with the time periods and other provisions of, the dispute resolution provisions of Section 2(c)(iii), the first Business Day after the resolution of such *bona fide* dispute).

5. Amendment; Waiver. The terms and provisions of this Note shall not be amended or waived except in a writing signed by the Company and the Holder.

6. Remedies, Characterizations, Other Obligations, Breaches and Injunctive Relief . The remedies provided in this Note shall be cumulative and in addition to all other remedies available under this Note, the Facility Agreement, at law or in equity (including a decree of specific performance and/or other injunctive relief). No remedy contained herein shall be deemed a waiver of compliance with the provisions giving rise to such remedy, and nothing herein shall limit the Holder's right to pursue actual damages for any failure by the Company to comply with the terms of this Note. The Company covenants to the Holder that there shall be no characterization concerning this instrument other than as expressly provided herein. Amounts set forth or provided for herein with respect to payments, conversion and the like (and the computation thereof) shall be the amounts to be received by the Holder thereof and shall not, except as expressly provided herein, be subject to any other obligation of the Company (or the performance thereof). The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the Holder shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

7. Specific Shall Not Limit General; Construction . No specific provision contained in this Note shall limit or modify any more general provision contained herein. This Note shall be deemed to be jointly drafted by the Company and all purchasers of Notes pursuant to the Facility Agreement and shall not be construed against any Person as the drafter hereof.

8. Failure or Indulgence Not Waiver. No failure or delay on the part of the Holder in the exercise of any power, right or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercise thereof or of any other right, power or privilege.

9. Notices. Whenever notice is required to be given under this Note, unless otherwise provided herein, such notice shall be given in accordance with Section 6.1 of the Facility Agreement.

10. Restrictions on Transfer.

(a) Registration or Exemption Required. This Note has been issued in a transaction exempt from the registration requirements of the Securities Act by virtue of Regulation D. None of the Note or the Conversion Shares may be pledged, transferred, sold, assigned, hypothecated or otherwise disposed of except pursuant to an effective registration statement or an exemption to the registration requirements of the Securities Act and applicable state laws including, without limitation, a so-called "4(1) and a half" transaction.

(b) Assignment. Subject to Section 10(a), the Holder may sell, transfer, assign, pledge, hypothecate or otherwise dispose of this Note, in whole or in part; provided that (i) the Holder shall deliver a written notice to Company, substantially in the form of the Assignment attached hereto as Exhibit B, indicating the Person or Persons to whom the Note shall be assigned and the respective principal amount of the Note to be assigned to each assignee, (ii) if such transfer is being effected as a so-called "4(1) and a half" transaction or pursuant to Rule 144A, any such transferee Person shall make the representations and agree to the representations set forth on Exhibit B-1 hereto and shall agree to comply with the provisions of Section 2(c)(iii) hereof, (iii) except in the case of any assignment or transfer pursuant to an effective registration statement covering the disposition of the Note or pursuant to Rule 144, the Holder shall deliver to the Company a legal opinion reasonably acceptable to the Company which, in the case of a so-called "4(1) and a half" transaction shall be substantially in the form attached hereto as Exhibit C, (iv) the transferee shall have complied with Section 2.5(d) of the Facility Agreement, and (v) unless an Event of Default shall have occurred and is continuing, no assignment shall be permitted to any (A) Major Pharmaceutical Company and any (B) entity principally engaged in the business of selling insulin or insulin delivery products (an "**Applicable Entity**"); provided, however, that (1) entities that own, directly or indirectly, equity interests in an Applicable Entity as part of a brokerage, insurance business, pension fund (or other benefit fund), investment banking, investment management, investment advisory, lobbying, or publishing business, or (2) any non-profit research or non-profit enterprise, shall not constitute an Applicable Entity, and (v) the Holder shall comply with all additional assignment provisions set forth in Section 6.5 of the Facility Agreement. The Company shall effect the assignment within three (3) business days (the "**Transfer Delivery Period**"), and shall deliver to the assignee(s) designated by Holder a Note or Notes of like tenor and terms for the appropriate principal amount. This Note and the rights evidenced hereby shall inure to the benefit of and be binding upon the successors and assigns of the Holder. The provisions of this Note are intended to be for the benefit of all Holders from time to time of this Note, and shall be enforceable by any such Holder. For avoidance of doubt, in the event Holder notifies the Company that such sale or transfer is a so called "4(1) and a half" transaction, the parties hereto agree that a legal opinion from outside counsel for the Holder delivered to counsel for the Company substantially in the form attached hereto as Exhibit C shall be the only requirement to satisfy an exemption from registration under the Securities Act to effectuate such "4(1) and half" transaction.

11. Payment of Collection, Enforcement and Other Costs . If (a) this Note is placed in the hands of an attorney for collection or enforcement or is collected or enforced through any legal proceeding; or (b) an attorney is retained to represent the Holder in any bankruptcy, reorganization, receivership of the Company or other proceedings affecting Company creditors' rights and involving a claim under this Note, then the Company shall pay the costs incurred by the Holder for such collection, enforcement or action, including reasonable attorneys' fees and disbursements.

12. Cancellation. After all Principal, Interest and other amounts at any time owed under, or on account of, this Note have been paid in full or converted into Shares in accordance with the terms hereof, this Note shall automatically be deemed cancelled, shall be surrendered to the Company for cancellation and shall not be reissued.

13. Registered Note. This Note may be transferred only upon notation of such transfer on the Register, and no assignment thereof shall be effective until recorded therein.

14. Waiver of Notice. To the extent permitted by law, the Company hereby waives demand, notice, presentment, protest and all other demands and notices in connection with the delivery, acceptance, performance, default or enforcement of this Note and the Facility Agreement.

15. Governing Law. This Note shall be governed by the laws of the State of New York applicable to contracts made and to be performed in such State. All legal proceedings concerning the interpretation and enforcement of this Note shall be commenced exclusively in the state and federal courts sitting in The City of New York. The Company hereby and each Holder (by its acceptance of this Note) irrevocably submits to the exclusive jurisdiction of such courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby, and hereby irrevocably waives, and agrees not to assert in any suit, action or other proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or other proceeding is improper or is an inconvenient venue for such proceeding. The Company hereby and each Holder (by its acceptance of this Note) irrevocably waives personal service of process and consents to process being served in any such suit, action or other proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such person at the address in effect for notices to it under Section 6.1 of the Facility Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. EACH OF THE COMPANY AND THE HOLDER (BY ACCEPTANCE HEREOF) IRREVOCABLY WAIVES THE RIGHT TO A TRIAL BY JURY IN ANY ACTION OR PROCEEDING BROUGHT TO ENFORCE ANY PROVISION OF THIS NOTE OR ANY OTHER TRANSACTION DOCUMENT.

16. Interpretative Matters. Unless the context otherwise requires, (a) all references to Sections or Exhibits are to Sections or Exhibits contained in or attached to this

Note, (b) each accounting term not otherwise defined in this Note has the meaning assigned to it in accordance with GAAP, (c) words in the singular or plural include the singular and plural and pronouns stated in either the masculine, the feminine or neuter gender shall include the masculine, feminine and neuter and (d) the use of the word "including" in this Note shall be by way of example rather than limitation. If a stock split, stock dividend, stock combination or other similar event occurs during any period over which an average price is being determined, then an appropriate adjustment will be made to such average to reflect such event.

17. Execution. A facsimile, telecopy, PDF or other reproduction of this Note may be delivered by the Company, and an executed copy of this Note may be delivered by the Company by facsimile, e-mail or other similar electronic transmission device pursuant to which the signature of or on behalf of the Company can be seen, and such execution and delivery shall be considered valid, binding and effective for all purposes. The Company hereby agrees that it shall not raise the execution of facsimile, PDF or other reproduction of this Note, or the fact that any signature was transmitted by facsimile, e-mail or other similar electronic transmission device, as a defense to the Company's execution of this Note. Notwithstanding the foregoing, the Company shall be required to deliver an originally executed Note to the Holder.

[Signature page follows]

IN WITNESS WHEREOF, the Company has caused this Note to be duly executed as of the date first set forth above.

COMPANY:

MANNKIND CORPORATION

By: _____

Name: _____

Title: _____

Exhibit A

CONVERSION NOTICE

Reference is made to the Senior Secured Convertible Note (the "**Note**") of **MANNKIND CORPORATION**, a Delaware corporation (the "**Company**"), in the original principal amount of $[ ]. In accordance with and pursuant to the Note, the undersigned hereby elects to convert the Conversion Amount (as defined in the Note) of the Note indicated below into Shares of Common Stock, par value $0.01 per share (the "**Common Stock**"), of the Company, as of the date specified below.

Date of Conversion: _____

Aggregate Conversion Amount to be converted at the Conversion Price (as defined in the Note):

_____

Principal, applicable thereto, to be converted: _____

Please confirm the following information:

Conversion Price: _____

Number of shares of Common Stock to be issued: _____

Please issue the Common Stock into which the Note is being converted in the following name and to the following address:

Issue to: _____

Facsimile Number: _____

Authorization: _____
By: _____
Title: _____

Dated: _____

DTC Participant Number and Name (if electronic book entry transfer): _____

Account Number (if electronic book entry transfer): _____

ACKNOWLEDGMENT

The Company hereby acknowledges this Conversion Notice and hereby directs [TRANSFER AGENT] to issue the above indicated number of shares of Common Stock.

MANNKIND CORPORATION

By: _____

Name: _____

Title: _____

Exhibit B

ASSIGNMENT

(To be executed by the registered holder
desiring to transfer the Note)

FOR VALUE RECEIVED, the undersigned holder of the attached Senior Secured Convertible Note (the "**Note**") hereby sells, assigns and transfers unto the person or persons below named the right to receive the principal amount of $ from Mannkind Corporation, a Delaware corporation, evidenced by the attached Note and does hereby irrevocably constitute and appoint attorney to transfer the said Note on the books of the Company, with full power of substitution in the premises.

Dated: _____

_____
Signature

Fill in for new registration of Note:

_____
Name

_____
Address

_____
Please print name and address of assignee
(including zip code number)

NOTICE

The signature to the foregoing Assignment must correspond to the name as written upon the face of the attached Note in every particular, without alteration or enlargement or any change whatsoever.

Exhibit B-1

[FORM OF INVESTOR REPRESENTATION LETTER]

, 20

[ ]

Gentlemen:

(" ") has agreed to purchase $ principal amount of Senior Secured Convertible Note (the "Note") of [ ] (the "Company") from [ ] ("[ ]"). We understand that the Note is a "restricted security." We represent and warrant that is a sophisticated institutional investor that would qualify as an "Accredited Investor" as defined in Rule 501 of Regulation D under the Securities Act of 1933, as amended (the "Securities Act").

represents and warrants as of the date hereof as follows:

1. That it is acquiring the Note and the shares of common stock, $0.01 par value per share underlying such Note (the "Conversion Shares") solely for its account for investment and not with a view to or for sale or distribution of said Note or Conversion Shares or any part thereof in violation of applicable securities laws, except pursuant to sales registered or exempted under the Securities Act; provided, however, that by making the representations herein, does not agree, or make any representation or warranty, to hold any of the securities for any minimum or other specific term and reserves the right to dispose of the securities at any time in accordance with or pursuant to a registration statement or an exemption under the Securities Act. does not presently have any agreement or understanding, directly or indirectly, with any Person to distribute the Note or the Conversion Shares in violation of applicable securities laws. As used in this Agreement, "**Person**" means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization and a government or any department or agency thereof. also represents that the entire legal and beneficial interests of the Note and Conversion Shares is acquiring is being acquired for, and will be held for, its account only;

2. understands that the Notes and the Conversion Shares have not been registered under the Securities Act in reliance on specific exemptions from the registration requirements of United States federal and state securities laws and in reliance in part upon the truth and accuracy of, and such 's compliance with, the representations, warranties, agreements, acknowledgments and understandings of set forth herein in order to determine the availability of such exemptions and the eligibility of to acquire the securities.

3. That the Note and the Conversion Shares must be held indefinitely unless they are subsequently registered under the Securities Act or an exemption from such registration is available. recognizes that the Company has no obligation to register the Note, or to comply with any exemption from such registration;

4. That neither the Note nor the Conversion Shares may be sold pursuant to Rule 144 adopted under the Securities Act unless certain conditions are met, including, among other things, the existence of a public market for the shares, the availability of certain current public information about the Company, the resale following the required holding period under Rule 144;

5. It is an “accredited investor” as defined in Regulation D promulgated under the Securities Act;

6. That it will not make any disposition of all or any part of the Note or Conversion Shares in any event unless and until:

(i) The Company shall have received a letter secured by from the Securities and Exchange Commission stating that no action will be recommended to the Securities and Exchange Commission with respect to the proposed disposition;

(ii) There is then in effect a registration statement under the Securities Act covering such proposed disposition and such disposition is made in accordance with said registration statement; or

(iii) shall have notified the Company of the proposed disposition and, in the case of a sale or transfer in a so called "4(1) and a half" transaction, shall have furnished counsel to the Company with an opinion of counsel, reasonably satisfactory to counsel to the Company.

We acknowledge that the Company will place stop orders with respect to the Note and the Conversion Shares, and if a registration statement is not effective, the Conversion Shares shall bear the following restrictive legend:

"THE SECURITY REPRESENTED BY THIS CERTIFICATE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, OR APPLICABLE STATE SECURITIES LAWS. THIS SECURITY MAY NOT BE SOLD, TRANSFERRED OR ASSIGNED, PLEDGED, HYPOTHECATED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER SAID ACT, OR PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER SAID ACT INCLUDING, WITHOUT LIMITATION, PURSUANT TO RULE 144 UNDER SAID ACT."

At any time and from time to time after the date hereof, shall, without further consideration, execute and deliver to [ ] or the Company such other instruments or documents and shall take such other actions as they may reasonably request to carry out the transactions contemplated hereby.

Very truly yours,

Exhibit C

FORM OF OPINION

, 20

[ ]

Re: Mannkind Corporation (the "Company")

Dear Sir:

[ ] ("[ ]") intends to transfer its Senior Secured Convertible Note in the principal amount of $ (the "Note") of the Company to (" ") without registration under the Securities Act of 1933, as amended (the "Securities Act"). In connection herewith, we have examined such documents and issues of law as we have deemed relevant.

Based on and subject to the foregoing, we are of the opinion that the transfer of the Note by to may be effected without registration under the Securities Act, provided, however, that the Note to be transferred to contain a legend restricting its transferability pursuant to the Securities Act and that transfer of the Note is subject to a stop order.

The foregoing opinion is furnished only to and may not be used, circulated, quoted or otherwise referred to or relied upon by you for any purposes other than the purpose for which furnished or by any other person for any purpose, without our prior written consent.

Very truly yours,

Exhibit 5.1

Sean M. Clayton
T: +1 858 550 6034
sclayton@cooley.com

March 3, 2014

MannKind Corporation
28903 North Avenue Paine
Valencia, CA 91355

Ladies and Gentlemen:

You have requested our opinion, as counsel to MannKind Corporation, a Delaware corporation (the " ***Company***"), with respect to certain matters in connection with the offering by the Company of the lesser of (i) $50,000,000 of shares or (ii) 25,000,000 shares of the Company's common stock, par value $0.01 (the "***Shares***"), pursuant to a Registration Statement on Form S-3 (No. 333-183679) (the *"**Registration Statement**"*), filed with the Securities and Exchange Commission (the *"**Commission**"*) under the Securities Act of 1933, as amended (the "***Act***"), the prospectus included within the Registration Statement (the "***Base Prospectus***"), and the prospectus supplement dated March 3, 2014, filed with the Commission pursuant to Rule 424(b) of the Rules and Regulations of the Act (the "***Prospectus Supplement***"). The Base Prospectus and the Prospectus Supplement are collectively referred to as the " ***Prospectus***." The Shares are to be sold by the Company in accordance with (i) an At-The-Market Issuance Sales Agreement, dated March 3, 2014, between the Company and MLV & Co. LLC (the "***MLV Agreement***") and (ii) an At-The-Market Issuance Sales Agreement, dated March 3, 2014, between the Company and Meyers Associates, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P.) (the "***Brinson Patrick Agreement***"), as described in the Prospectus.

In connection with this opinion, we have examined and relied upon the Registration Statement and the Prospectus, the MLV Agreement, the Brinson Patrick Agreement, the Company's Amended and Restated Certificate of Incorporation, as amended, its Amended and Restated Bylaws, and the originals or copies certified to our satisfaction of such records, documents, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. In rendering this opinion, we have assumed the genuineness and authenticity of all signatures on original documents; the genuineness and authenticity of all documents submitted to us as originals; the conformity to originals of all documents submitted to us as copies; and the accuracy, completeness and authenticity of certificates of public officials.

Our opinion herein is expressed solely with respect to the federal laws of the United States of America and the General Corporation Law of the State of Delaware. Our opinion is based on these laws as in effect on the date hereof. We express no opinion as to whether the laws of any particular jurisdiction other than those identified above are applicable to the subject matter hereof.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares, when sold and issued against payment therefor in accordance with the MLV Agreement or the Brinson Patrick Agreement, as applicable, the Registration Statement and the Prospectus, will be validly issued, fully paid and nonassessable.

We consent to the reference to our firm under the caption "Legal Matters" in the Prospectus and to the filing of this opinion as an exhibit to the Company's Annual Report on Form 10-K for the year ended December 31, 2013 to be filed with the Commission for incorporation by reference into the Registration Statement.

Very truly yours,

Cooley LLP

By: /s/ Sean M. Clayton
Sean M. Clayton

Exhibit 10.31

MANNKIND CORPORATION

Common Stock
(par value $0.01 per share)

At-The-Market Issuance Sales Agreement

March 3, 2014

MLV & Co. LLC
1251 Avenue of the Americas
41st Floor
New York, NY 10020

Ladies and Gentlemen:

MannKind Corporation, a Delaware corporation (the "Company"), confirms its agreement (this "Agreement") with MLV & Co. LLC ("MLV"), as follows:

1. Issuance and Sale of Shares. The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell through MLV, shares (the "Placement Shares") of the Company's common stock, par value $0.01 per share (the "Common Stock"), up to an aggregate offering price of $50,000,000 less the aggregate offering price of any Common Stock sold pursuant to the Concurrent Facility Agreement (as defined below), *provided however*, that in no event shall the Company issue or sell through MLV such number of Placement Shares that (a) would cause the Company to not satisfy the eligibility requirements for use of Form S-3 (including Instruction I.B.6. thereof), (b) exceeds the number of shares of Common Stock registered on the effective Registration Statement (as defined below) pursuant to which the offering is being made or (c) exceeds the number of authorized but unissued shares of the Company's Common Stock (the lesser of (a), (b) and (c), the " Maximum Amount"). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this Section 1 on the amount of Placement Shares issued and sold under this Agreement shall be the sole responsibility of the Company and that MLV shall have no obligation in connection with such compliance. The issuance and sale of Placement Shares through MLV will be effected pursuant to the Registration Statement filed by the Company and declared effective by the Securities and Exchange Commission (the " Commission"), although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue any Placement Shares.

The Company has filed, in accordance with the provisions of the Securities Act of 1933, as amended (the " Securities Act"), and the rules and regulations thereunder (the "Securities Act Regulations"), with the Commission a registration statement on Form S-3 (File No. 333-183679), including a base prospectus, relating to certain securities, including the Placement Shares to be issued from time to time by the Company, and which incorporates by reference

documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended (the " Exchange Act"), and the rules and regulations thereunder. The Company has prepared a prospectus supplement specifically relating to the Placement Shares (the " Prospectus Supplement") to the base prospectus included as part of such registration statement. The Company will furnish to MLV, for use by MLV, copies of the prospectus included as part of such registration statement, as supplemented by the Prospectus Supplement, relating to the Placement Shares. Except where the context otherwise requires, such registration statement, including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act Regulations or deemed to be a part of such registration statement pursuant to Rule 430B of the Securities Act Regulations, is herein called the " Registration Statement." The base prospectus, including all documents incorporated therein by reference, included in the Registration Statement, as it may be supplemented by the Prospectus Supplement, in the form in which such prospectus and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act Regulations, is herein called the " Prospectus." Any reference herein to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated by reference therein, and any reference herein to the terms "amend," "amendment" or "supplement" with respect to the Registration Statement or the Prospectus shall be deemed to refer to and include the filing after the execution hereof of any document with the Commission deemed to be incorporated by reference therein (the " Incorporated Documents").

For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include the most recent copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval System, or if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, " EDGAR").

2. Placements. Each time that the Company wishes to issue and sell Placement Shares hereunder (each, a " Placement"), it will notify MLV by email notice (or other method mutually agreed to in writing by the parties) of the proposed terms of such Placement, which shall include at a minimum the number of Placement Shares to be issued, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one day and any minimum price below which sales may not be made (a " Placement Notice"), the form of which is attached hereto as Schedule 1. The Placement Notice shall originate from any of the individuals from the Company set forth on Schedule 3 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from MLV set forth on Schedule 3, as such Schedule 3 may be amended from time to time. The Placement Notice shall be effective unless and until (i) MLV declines to accept the terms contained therein for any reason, in its sole discretion by email notice to the Company within one Business Day (as defined below) from the time the Placement Notice is received, (ii) the entire amount of the Placement Shares thereunder have been sold, (iii) the Company suspends or terminates the Placement Notice or (iv) this Agreement has been terminated under the provisions of Section 13. The amount of any discount, commission or other compensation to be paid by the Company to MLV in connection with the sale of the Placement

Shares shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor MLV will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to MLV and MLV does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3. Sale of Placement Shares by MLV.

(a) Subject to the terms and conditions of this Agreement, for the period specified in the Placement Notice, MLV will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the NASDAQ Global Market (the "Exchange"), to sell the Placement Shares up to the amount specified, and otherwise in accordance with the terms of such Placement Notice. MLV will provide written confirmation to the Company no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the compensation payable by the Company to MLV pursuant to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by MLV (as set forth in Section 5(b)) from the gross proceeds that it receives from such sales. Subject to the terms of the Placement Notice, MLV shall sell Placement Shares only by methods deemed to be an "at the market" offering as defined in Rule 415 of the Securities Act Regulations, including without limitation sales made directly on the Exchange, on any other existing trading market for the Common Stock or to or through a market maker. Subject to the terms of the Placement Notice and only with the Company's prior written consent, MLV may also sell Placement Shares by any other method permitted by law, including but not limited to in negotiated transactions. " Trading Day" means any day on which shares of Common Stock are purchased and sold on the Exchange.

(b) During the term of this Agreement, neither MLV nor any of its affiliates or subsidiaries shall engage in (i) any short sale of any security of the Company, (ii) any sale of any security of the Company that MLV does not own or any sale which is consummated by the delivery of a security of the Company borrowed by, or for the account of, MLV or (iii) any market making bidding, stabilization or other trading activity with respect to the Common Stock or related derivative securities if such activity would be prohibited under Regulation M or other anti-manipulation rules under the Securities Act. Neither MLV nor any of its affiliates or subsidiaries shall engage in any proprietary trading or trading for MLV's (or its affiliates' or subsidiaries') own account.

4. Suspension of Sales. The Company or MLV may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party set forth on Schedule 3), suspend any sale of Placement Shares;

provided, however, that such suspension shall not affect or impair any party's obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. Each of the parties agrees that no such notice under this Section 4 shall be effective against any other party unless it is made to one of the individuals named on Schedule 3 hereto, as such Schedule may be amended from time to time.

5. Sale and Delivery to MLV; Settlement.

(a) Sale of Placement Shares. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, unless MLV declines to accept the terms of a Placement Notice, and unless the sale of the Placement Shares described therein has been declined, suspended, or otherwise terminated in accordance with the terms of this Agreement, MLV, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such Placement Shares up to the amount specified in, and otherwise in accordance with, the terms of such Placement Notice. The Company acknowledges and agrees that (i) there can be no assurance that MLV will be successful in selling Placement Shares, (ii) MLV will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by MLV to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares as required under this Agreement and (iii) MLV shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement, except as otherwise agreed by MLV and the Company.

(b) Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the third (3rd) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a "Settlement Date"). The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the " Net Proceeds") will be equal to the aggregate sales price received by MLV, after deduction for (i) MLV's commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, and (ii) any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales.

(c) Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting MLV's or its designee's account (provided MLV shall have given the Company written notice of such designee a reasonable period of time prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. On each Settlement Date, MLV will deliver the related Net Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. If the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date through no fault of MLV, the Company agrees that in addition to and in no way limiting the rights and obligations set forth in Section 11(a) hereto, it will (i) hold MLV harmless

against any loss, claim, damage, or expense (including reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to MLV (without duplication) any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

(d) Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate gross sales proceeds of Placement Shares sold pursuant to this Agreement would exceed the lesser of (A) together with all sales of Placement Shares under this Agreement, the Maximum Amount and (B) the amount authorized from time to time to be issued and sold under this Agreement by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to MLV in writing. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to this Agreement at a price lower than any minimum price authorized from time to time by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to MLV in writing.

6. Representations and Warranties of the Company. Except as disclosed in the Registration Statement or the Prospectus (including Incorporated Documents), the Company represents and warrants to, and agrees with MLV that as of the date of this Agreement and as of each Applicable Time (as defined below), unless such representation, warranty or agreement specifies a different time:

(a) Registration Statement and Prospectus. The Company and, assuming no act or omission on the part of MLV that would make such statement untrue, the transactions contemplated by this Agreement meet the requirements for and comply with the conditions for the use of Form S-3 under the Securities Act. The Registration Statement has been filed with the Commission and has been declared effective under the Securities Act. The Prospectus Supplement will name MLV as an agent in the section entitled "Plan of Distribution." The Company has not received, and has no notice of, any order of the Commission preventing or suspending the use of the Registration Statement, or threatening or instituting proceedings for that purpose. The Registration Statement and the offer and sale of Placement Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said Rule. Any statutes, regulations, contracts or other documents that are required to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement have been so described or filed. Copies of the Registration Statement, the Prospectus, and any such amendments or supplements and all documents incorporated by reference therein that were filed with the Commission on or prior to the date of this Agreement have been delivered, or are available through EDGAR, to MLV and its counsel. The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the distribution of the Placement Shares, will not distribute any offering material in connection with the offering or sale of the Placement Shares other than the Registration Statement and the Prospectus and any Issuer Free Writing Prospectus (as defined below) to which MLV has consented, such consent not to be unreasonably withheld, conditioned or delayed. The Common Stock is currently quoted on the Exchange under the trading symbol "MNKD". The Company has not, in the 12 months preceding the date hereof, received notice

from the Exchange to the effect that the Company is not in compliance with the listing or maintenance requirements and the Company has no reason to believe that it will not in the foreseeable future continue to be in compliance with all such listing and maintenance requirements.

(b) No Misstatement or Omission. The Registration Statement, when it became effective, and the Prospectus, and any amendment or supplement thereto, on the date of such Prospectus or amendment or supplement, conformed and will conform in all material respects with the requirements of the Securities Act. At each Settlement Date, the Registration Statement and the Prospectus, as of such date, will conform in all material respects with the requirements of the Securities Act. The Registration Statement, when it became effective, did not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus and any amendment and supplement thereto, on the date thereof and at each Applicable Time (defined below), did not or will not include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading. The documents incorporated by reference in the Prospectus or any Prospectus Supplement did not, and any further documents filed and incorporated by reference therein will not, when filed with the Commission, contain an untrue statement of a material fact or omit to state a material fact required to be stated in such document or necessary to make the statements in such document, in light of the circumstances under which they were made, not misleading. The foregoing shall not apply to statements in, or omissions from, any such document made in reliance upon, and in conformity with, information furnished to the Company by MLV specifically for use in the preparation thereof.

(c) Conformity with Securities Act and Exchange Act . The Registration Statement, the Prospectus, or any amendment or supplement thereto, and the documents incorporated by reference in the Registration Statement, the Prospectus or any amendment or supplement thereto, when such documents were or are filed with the Commission under the Securities Act or the Exchange Act or became or become effective under the Securities Act, as the case may be, conformed or will conform in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable.

(d) Financial Information. The consolidated financial statements of the Company included or incorporated by reference in the Registration Statement and the Prospectus, together with the related notes and schedules, present fairly, in all material respects, the consolidated financial position of the Company and the Subsidiaries (as defined below) as of the dates indicated and the consolidated results of operations, cash flows and changes in stockholders' equity of the Company for the periods specified (subject, in the case of unaudited statements, to normal year-end audit adjustments) and have been prepared in compliance with the requirements of the Securities Act and Exchange Act, as applicable, and in conformity with GAAP (as defined below) applied on a consistent basis (except for such adjustments to accounting standards and practices as are noted therein and except in the case of unaudited financial statements to the extent they may exclude footnotes or may be condensed or summary statements) during the periods involved; the other financial and statistical data with respect to the Company and the Subsidiaries contained or incorporated by reference in the Registration

Statement and the Prospectus are accurately and fairly presented and prepared on a basis consistent with the financial statements and books and records of the Company; there are no financial statements (historical or pro forma) that are required to be included or incorporated by reference in the Registration Statement or the Prospectus that are not included or incorporated by reference as required; the Company and the Subsidiaries do not have any material liabilities or obligations, direct or contingent (including any off-balance sheet obligations), not described in the Registration Statement (including the exhibits thereto and Incorporated Documents) and the Prospectus which are required to be described in the Registration Statement or the Prospectus (including exhibits thereto and Incorporated Documents); and all disclosures contained or incorporated by reference in the Registration Statement and the Prospectus regarding "non-GAAP financial measures" (as such term is defined by the rules and regulations of the Commission) comply in all material respects with Regulation G of the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable;

(e) Conformity with EDGAR Filing. The Prospectus delivered to MLV for use in connection with the sale of the Placement Shares pursuant to this Agreement will be identical to the versions of the Prospectus created to be transmitted to the Commission for filing via EDGAR, except to the extent permitted by Regulation S-T.

(f) Organization. The Company and each of its Subsidiaries are, and will be, duly organized, validly existing as a corporation and in good standing under the laws of their respective jurisdictions of organization. The Company and each of its Subsidiaries are, and will be, duly licensed or qualified as a foreign corporation for transaction of business and in good standing under the laws of each other jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such license or qualification, and have all corporate power and authority necessary to own or hold their respective properties and to conduct their respective businesses as described in the Registration Statement and the Prospectus, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect or would reasonably be expected to have a material adverse effect on the assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders' equity (as set forth on the Company's most recent balance sheet included in the Incorporated Documents) or results of operations of the Company and the Subsidiaries (as defined below) taken as a whole (a " Material Adverse Effect").

(g) Subsidiaries. Schedule 4 hereto sets forth each of the Company's significant subsidiaries (as such term is defined in Rule 1-02 of Regulation S-X promulgated by the Commission), if any (each such significant subsidiary, a " Subsidiary" and collectively, the "Subsidiaries"). Except as set forth in the Registration Statement and in the Prospectus, the Company owns, directly or indirectly, all of the equity interests of the Subsidiaries free and clear of any lien, charge, security interest, encumbrance, right of first refusal or other restriction, and all the equity interests of the Subsidiaries are validly issued and are fully paid, nonassessable and free of preemptive and similar rights.

(h) No Violation or Default. Neither the Company nor any of its Subsidiaries is (i) in violation of its charter or by-laws or similar organizational documents; (ii) in default, and

no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its Subsidiaries is a party or by which the Company or any of its Subsidiaries is bound or to which any of the property or assets of the Company or any of its Subsidiaries are subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of each of clauses (ii) and (iii) above, for any such violation or default that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. To the Company's knowledge, no other party under any material contract or other agreement to which it or any of its Subsidiaries is a party is in default in any respect thereunder where such default would have a Material Adverse Effect.

(i) No Material Adverse Change. Subsequent to December 31, 2013, and other than the Company's execution of this Agreement and the sale of any Placement Shares hereunder and the Company's execution of an At-The-Market Issuance Sales Agreement substantially similar to this Agreement with Meyers Associates, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P.) (the "Concurrent Facility Agreement") and the sale of any shares of the Company's common stock thereunder, there has not been (i) any Material Adverse Effect, (ii) any transaction which is material to the Company and the Subsidiaries taken as a whole, (iii) any obligation or liability, direct or contingent (including any off-balance sheet obligations), incurred by the Company or any Subsidiary, which is material to the Company and the Subsidiaries taken as a whole, (iv) any material change in the capital stock or outstanding long-term indebtedness of the Company or any of its Subsidiaries or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company or any Subsidiary, other than in each case above (A) in the ordinary course of business, (B) as otherwise disclosed in the Registration Statement or Prospectus (including any document deemed incorporated by reference therein) or (C) where such matter, item, change or development would not make the statements in the Registration Statement or the Prospectus contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading.

(j) Capitalization. The issued and outstanding shares of capital stock of the Company have been validly issued, are fully paid and non-assessable and, other than as disclosed in or contemplated by the Registration Statement or the Prospectus, and are not subject to any preemptive rights, rights of first refusal or similar rights. The Company has an authorized, issued and outstanding capitalization as set forth in the Registration Statement and the Prospectus as of the dates referred to therein (other than the grant of additional options or other equity awards under the Company's existing stock option plans, or changes in the number of outstanding shares of Common Stock of the Company due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, shares of Common Stock outstanding on the date hereof or described in the Registration Statement and the Prospectus (including any document deemed incorporated by reference therein) or as a result of the issuance of Placement Shares or shares of the Company's common stock under the Concurrent Facility Agreement) and such authorized capital stock conforms in all material respects to the description thereof set forth in the Registration Statement and the Prospectus. The description of the

Common Stock in the Registration Statement and the Prospectus (including any document deemed incorporated by reference therein) is complete and accurate in all material respects. Other than as set forth or described in the Registration Statement and the Prospectus, as of the dates referred to therein, the Company did not have outstanding any options to purchase, or any rights or warrants to subscribe for, or any securities or obligations convertible into, or exchangeable for, or any contracts or commitments to issue or sell, any shares of capital stock or other securities.

(k) Authorization; Enforceability. The Company has full legal right, power and authority to enter into this Agreement and perform the transactions contemplated hereby. This Agreement has been duly authorized, executed and delivered by the Company and is a legal, valid and binding agreement of the Company enforceable against the Company in accordance with its terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification and contribution provisions of Section 11 hereof may be limited by federal or state securities laws and public policy considerations in respect thereof.

(l) Authorization of Placement Shares. The Placement Shares, when issued and delivered pursuant to the terms approved by the board of directors of the Company or a duly authorized committee thereof, or a duly authorized executive committee, against payment therefor as provided herein, will be duly and validly authorized and issued and fully paid and nonassessable, free and clear of any pledge, lien, encumbrance, security interest or other claim (other than any pledge, lien, encumbrance, security interest or other claim arising from an act or omission of MLV or a purchaser), including any statutory or contractual preemptive rights, resale rights, rights of first refusal or other similar rights, and will be registered pursuant to Section 12 of the Exchange Act. The Placement Shares, when issued, will conform in all material respects to the description thereof set forth in or incorporated into the Prospectus.

(m) No Consents Required. No consent, approval, authorization, order, registration or qualification of or with any court or arbitrator or any governmental or regulatory authority is required for the execution, delivery and performance by the Company of this Agreement, and the issuance and sale by the Company of the Placement Shares as contemplated hereby, except for the registration of the Placement Shares under the Securities Act and such consents, approvals, authorizations, orders and registrations or qualifications as may be required under applicable state securities laws or by the by-laws and rules of the Financial Industry Regulatory Authority ("FINRA") or the Exchange in connection with the sale of the Placement Shares by MLV.

(n) No Preferential Rights. Except as set forth in the Registration Statement and the Prospectus, (i) no person, as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act (each, a "Person"), has the right, contractual or otherwise, to cause the Company to issue or sell to such Person any shares of Common Stock or shares of any other capital stock or other securities of the Company (other than upon the exercise of options or warrants to purchase Common Stock or upon the exercise of options or stock awards that may be granted from time to time under the Company's stock option plans), (ii) no Person

has any preemptive rights, rights of first refusal, or any other rights (whether pursuant to a "poison pill" provision or otherwise) to purchase any shares of Common Stock or shares of any other capital stock or other securities of the Company from the Company which have not been duly waived with respect to the offering contemplated hereby, (iii) except as may be disclosed to MLV in writing, no Person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Common Stock, and (iv) no Person has the right, contractual or otherwise, to require the Company to register under the Securities Act any shares of Common Stock or shares of any other capital stock or other securities of the Company, or to include any such shares or other securities in the Registration Statement or the offering contemplated thereby, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Placement Shares as contemplated thereby or otherwise.

(o) Independent Public Accountants. Deloitte & Touche LLP, whose report on the consolidated financial statements of the Company is filed with the Commission as part of the Company's most recent Annual Report on Form 10-K filed with the Commission and incorporated into the Registration Statement, is and, during the periods covered by its reports, was an independent public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board (United States). To the Company's knowledge, Deloitte & Touche LLP is not in violation of the auditor independence requirements of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act") with respect to the Company.

(p) Enforceability of Agreements. To the Company's knowledge, all agreements between the Company and third parties expressly referenced in the Prospectus, other than such agreements that have expired by their terms or whose termination is disclosed in documents filed by the Company on EDGAR, are legal, valid and binding obligations of the Company enforceable in accordance with their respective terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification provisions of certain agreements may be limited by federal or state securities laws or public policy considerations in respect thereof, except for any unenforceability that, individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect.

(q) No Litigation. There are no legal, governmental or regulatory actions, suits or proceedings pending, nor, to the Company's knowledge, any legal, governmental or regulatory investigations, to which the Company or a Subsidiary is a party or to which any property of the Company or any of its Subsidiaries is the subject that, individually or in the aggregate, if determined adversely to the Company or any of its Subsidiaries, would reasonably be expected to have a Material Adverse Effect or materially and adversely affect the ability of the Company to perform its obligations under this Agreement; to the Company's knowledge, no such actions, suits or proceedings are threatened or contemplated by any governmental or regulatory authority or threatened by others that, individually or in the aggregate, if determined adversely to the Company or any of its Subsidiaries, would reasonably be expected to have a Material Adverse Effect; and (i) there are no current or pending legal, governmental or regulatory actions, suits or proceedings or, to the Company's knowledge, investigations that are required under the Securities Act to be described in the Prospectus that are not described in the

Prospectus including any Incorporated Document; and (ii) there are no contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement that are not so filed.

(r) Licenses and Permits. The Company and each of its Subsidiaries possess or have obtained, all licenses, certificates, consents, orders, approvals, permits and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of their respective properties or the conduct of their respective businesses as described in the Registration Statement and the Prospectus (the "Permits"), except where the failure to possess, obtain or make the same would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Neither the Company nor any of its Subsidiaries have received written notice of any proceeding relating to revocation or modification of any such Permit or has any reason to believe that such Permit will not be renewed in the ordinary course, except where the failure to obtain any such renewal would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(s) Market Capitalization. As of the close of trading on the Exchange on the Trading Day immediately prior to the date of this Agreement, the aggregate market value of the outstanding voting and non-voting common equity (as defined in Securities Act Rule 405) of the Company held by persons other than affiliates (as defined in Securities Act Rule 405) was $75 million or more (calculated in accordance with Instruction 1.B.1 of Form S-3). The Company is not a shell company (as defined in Rule 405 under the Securities Act) and has not been a shell company for at least 12 calendar months previously and if it has been a shell company at any time previously, has filed current Form 10 information (as defined in Instruction I.B.6 of Form S-3) with the Commission at least 12 calendar months previously reflecting its status as an entity that is not a shell company. To enable MLV to rely on Rule 5110(b)(7)(C)(i) of FINRA, the Company represents that, as of the date of this Agreement, the Company (i) has a non-affiliate, public common equity float of at least $150 million or a non-affiliate, public common equity float of at least $100 million and annual trading volume of at least three million shares and (ii) has been subject to the Exchange Act reporting requirements for a period of at least 36 months.

(t) No Material Defaults. Neither the Company nor any of the Subsidiaries has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect. The Company has not filed a report pursuant to Section 13(a) or 15(d) of the Exchange Act since the filing of its last Annual Report on Form 10-K, indicating that it (i) has failed to pay any dividend or sinking fund installment on preferred stock or (ii) has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect.

(u) Certain Market Activities. Neither the Company, nor any of the Subsidiaries, nor, to the Company's knowledge, any of their respective directors, officers or controlling persons has taken, directly or indirectly, any action designed, or that has constituted or might reasonably be expected to cause or result in, under the Exchange Act or otherwise, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Placement Shares.

(v) Broker/Dealer Relationships. Neither the Company nor any of the Subsidiaries or any related entities (i) is required to register as a "broker" or "dealer" in accordance with the provisions of the Exchange Act or (ii) directly or indirectly through one or more intermediaries, controls or is a "person associated with a member" or "associated person of a member" (within the meaning set forth in the FINRA Manual).

(w) No Reliance. The Company has not relied upon MLV or legal counsel for MLV for any legal, tax or accounting advice in connection with the offering and sale of the Placement Shares.

(x) Taxes. The Company and each of its Subsidiaries have filed all federal, state, local and foreign tax returns which have been required to be filed and paid all taxes shown thereon through the date hereof, to the extent that such taxes have become due and are not being contested in good faith, except where the failure to do so would not reasonably be expected to have a Material Adverse Effect. Except as otherwise disclosed in or contemplated by the Registration Statement or the Prospectus, no tax deficiency has been determined adversely to the Company or any of its Subsidiaries which has had, or would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect. The Company has no knowledge of any federal, state or other governmental tax deficiency, penalty or assessment which has been asserted or threatened against it which would have a Material Adverse Effect.

(y) Title to Real and Personal Property. The Company and its Subsidiaries have good and marketable title in fee simple to all items of real property and good and valid title to all personal property (excluding Intellectual Property) described in the Registration Statement or Prospectus as being owned by them that are material to the businesses of the Company or such Subsidiary, in each case free and clear of all liens, encumbrances and claims, except those that (i) do not materially interfere with the use made of such property by the Company and any of its Subsidiaries or (ii) would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. Any real property described in the Registration Statement or Prospectus as being leased by the Company and any of its Subsidiaries is held by them under valid, existing and enforceable leases, except those that (A) do not materially interfere with the use made or proposed to be made of such property by the Company or any of its Subsidiaries or (B) would not be reasonably expected, individually or in the aggregate, to have a Material Adverse Effect.

(z) Intellectual Property. To its knowledge, the Company and its Subsidiaries own or possess adequate rights to use all patents, patent applications, trademarks (both registered and unregistered), service marks, trade names, trademark registrations, service mark registrations, copyrights, licenses and know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures) (collectively, the "Intellectual Property"), necessary for the conduct of their respective businesses as conducted as of the date hereof, except to the extent that the failure to own or possess adequate rights to use such Intellectual Property would not, individually or in the aggregate, reasonably be expected to

have a Material Adverse Effect; except as disclosed in writing to MLV, the Company and any of its Subsidiaries have not received any written notice of any claim of infringement or conflict which asserted Intellectual Property rights of others, which infringement or conflict, if the subject of an unfavorable decision, would result in a Material Adverse Effect; there are no pending, or to the Company's knowledge, threatened judicial proceedings or interference proceedings against the Company or its Subsidiaries challenging the Company's or its Subsidiaries' rights in or to or the validity of the scope of any of the Company's or its Subsidiaries' owned material patents, patent applications or proprietary information; no other entity or individual has any right or claim in any of the Company's or its Subsidiaries' owned material patents, patent applications or any patent to be issued therefrom by virtue of any contract, license or other agreement entered into between such entity or individual and the Company or a Subsidiary or by any non-contractual obligation of the Company or a Subsidiary, other than by written licenses granted by the Company or a Subsidiary and other than such rights or claims that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; the Company and its Subsidiaries have not received any written notice of any claim challenging the rights of the Company or a Subsidiary in or to any Intellectual Property owned, licensed or optioned by the Company or such Subsidiary which claim, if the subject of an unfavorable decision, would result in a Material Adverse Effect.

(aa) Environmental Laws. The Company and its Subsidiaries (i) are in compliance with any and all applicable federal, state, local and foreign laws, rules, regulations, decisions and orders relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "Environmental Laws"); (ii) have received and are in compliance with all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses as described in the Registration Statement and the Prospectus; and (iii) have not received notice of any actual or potential liability for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, except, in the case of any of clauses (i), (ii) or (iii) above, for any such failure to comply or failure to receive required permits, licenses, other approvals or liability as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(bb) Disclosure Controls. The Company and each of its Subsidiaries maintain systems of internal accounting controls designed to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company is not aware of any material weaknesses in its internal control over financial reporting (other than as set forth in the Prospectus). Since the date of the latest audited financial statements of the Company included in the Prospectus, there has been no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting (other than as set forth in the Prospectus). The Company has established disclosure controls and procedures (as

defined in Exchange Act Rules 13a-15 and 15d-15) for the Company and designed such disclosure controls and procedures to ensure that material information relating to the Company and each of its Subsidiaries is made known to the certifying officers by others within those entities, particularly during the period in which the Company's Annual Report on Form 10-K or Quarterly Report on Form 10-Q, as the case may be, is being prepared. The Company's certifying officers have evaluated the effectiveness of the Company's controls and procedures as of a date within 90 days prior to the filing date of the Form 10-K for the fiscal year most recently ended (such date, the "Evaluation Date"). The Company presented in its Form 10-K for the fiscal year most recently ended the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there have been no significant changes in the Company's internal controls (as such term is defined in Item 307(b) of Regulation S-K under the Securities Act) or, to the Company's knowledge, in other factors that could significantly adversely affect the Company's internal controls. To the knowledge of the Company, the Company's "internal controls over financial reporting" and "disclosure controls and procedures" are effective.

(cc) Sarbanes-Oxley. There is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company's directors or officers, in their capacities as such, to comply with any applicable provisions of the Sarbanes-Oxley Act and the rules and regulations promulgated thereunder. Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company as applicable) has made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other documents required to be filed by it or furnished by it to the Commission. For purposes of the preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Sarbanes-Oxley Act.

(dd) Finder's Fees. Neither the Company nor any of the Subsidiaries has incurred any liability for any finder's fees, brokerage commissions or similar payments in connection with the transactions herein contemplated, except as may otherwise exist with respect to MLV pursuant to this Agreement.

(ee) Labor Disputes. No labor disturbance by or dispute with employees of the Company or any of its Subsidiaries exists or, to the knowledge of the Company, is threatened which would reasonably be expected to result in a Material Adverse Effect

(ff) Investment Company Act. Neither the Company nor any of the Subsidiaries is or, after giving effect to the offering and sale of the Placement Shares, will be an "investment company" or an entity "controlled" by an "investment company," as such terms are defined in the Investment Company Act of 1940, as amended (the "Investment Company Act").

(gg) Operations. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial record keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions to which the Company or its

Subsidiaries are subject, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency having jurisdiction over the Company or its Subsidiaries (collectively, the " Money Laundering Laws"), except as would not reasonably be expected to result in a Material Adverse Effect; and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its Subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(hh) Off-Balance Sheet Arrangements. There are no transactions, arrangements and other relationships between and/or among the Company, and/or, to the knowledge of the Company, any of its affiliates and any unconsolidated entity, including, but not limited to, any structured finance, special purpose or limited purpose entity (each, an "Off Balance Sheet Transaction") that would reasonably be expected to affect materially the Company's liquidity or the availability of or requirements for its capital resources, including those Off Balance Sheet Transactions described in the Commission's Statement about Management's Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), in each case that are required to be described in the Prospectus which have not been described as required.

(ii) Underwriter Agreements. The Company anticipates being a party to the Concurrent Facility Agreement simultaneous with this Agreement, but will not have an open sales order in force with more than one agent or underwriter under such agreements at any given time, provided, however, that nothing in this Agreement shall prohibit the Company from entering into the Concurrent Facility Agreement, a committed equity financing facility or similar transaction.

(jj) ERISA. To the knowledge of the Company, (i) each material employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("ERISA"), that is maintained, administered or contributed to by the Company or any of its affiliates for employees or former employees of the Company and any of its Subsidiaries has been maintained in material compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Internal Revenue Code of 1986, as amended (the " Code"); (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred with respect to any such plan excluding transactions effected pursuant to a statutory or administrative exemption; and (iii) for each such plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, no "accumulated funding deficiency" as defined in Section 412 of the Code has been incurred, whether or not waived, and the fair market value of the assets of each such plan (excluding for these purposes accrued but unpaid contributions) equals or exceeds the present value of all benefits accrued under such plan determined using reasonable actuarial assumptions, other than, in the case of (i), (ii) and (iii) above, as would not reasonably be expected to have a Material Adverse Effect.

(kk) Forward Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) (a "Forward Looking Statement") contained in the Registration Statement and the Prospectus has been made

or reaffirmed without a reasonable basis or has been disclosed other than in good faith. The Forward Looking Statements incorporated by reference in the Registration Statement and the Prospectus from the Company's Annual Report on Form 10-K for the fiscal year most recently ended (i) except for any Forward Looking Statement included in any financial statements and notes thereto, are within the coverage of the safe harbor for forward looking statements set forth in Section 27A of the Securities Act, Rule 175(b) under the Securities Act or Rule 3b-6 under the Exchange Act, as applicable, (ii) were made by the Company with a reasonable basis and in good faith and reflect the Company's good faith commercially reasonable best estimate of the matters described therein, and (iii) have been prepared in accordance with Item 10 of Regulation S-K under the Securities Act.

(ll) Margin Rules. Neither the issuance, sale and delivery of the Placement Shares nor the application of the proceeds thereof by the Company as described in the Registration Statement and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors.

(mm) Insurance. The Company and each of its Subsidiaries carry, or are covered by, insurance in such amounts and covering such risks as the Company and each of its Subsidiaries reasonably believe are adequate for the use of their properties and as is customary for companies of similar size engaged in similar businesses in similar industries.

(nn) No Improper Practices. (i) Neither the Company nor, to the Company's knowledge, the Subsidiaries, nor to the Company's knowledge, any of their respective executive officers has, in the past five years, made any unlawful contributions to any candidate for any political office (or failed fully to disclose any contribution in violation of law) or made any contribution or other payment to any official of, or candidate for, any federal, state, municipal, or foreign office or other person charged with similar public or quasi-public duty in violation of any law or of the character required to be disclosed in the Prospectus; (ii) no relationship, direct or indirect, exists between or among the Company or, to the Company's knowledge, any Subsidiary or any affiliate of any of them, on the one hand, and the directors, officers and stockholders of the Company or, to the Company's knowledge, any Subsidiary, on the other hand, that is required by the Securities Act to be described in the Registration Statement and the Prospectus that is not so described; (iii) no relationship, direct or indirect, exists between or among the Company or any Subsidiary or any affiliate of them, on the one hand, and the directors, officers, stockholders or directors of the Company or, to the Company's knowledge, any Subsidiary, on the other hand, that is required by the rules of FINRA to be described in the Registration Statement and the Prospectus that is not so described; (iv) except as described in the Prospectus, there are no material outstanding loans or advances or material guarantees of indebtedness by the Company or, to the Company's knowledge, any Subsidiary to or for the benefit of any of their respective officers or directors or any of the members of the families of any of them; (v) the Company has not offered, or caused any placement agent to offer, Common Stock to any person with the intent to influence unlawfully (A) a customer or supplier of the Company or any Subsidiary to alter the customer's or supplier's level or type of business with the Company or any Subsidiary or (B) a trade journalist or publication to write or publish favorable information about the Company or any Subsidiary or any of their respective products or services; and (vi) neither the Company nor any Subsidiary nor, to the Company's knowledge, any employee or

agent of the Company or any Subsidiary has made any payment of funds of the Company or any Subsidiary or received or retained any funds in violation of any law, rule or regulation (including, without limitation, the Foreign Corrupt Practices Act of 1977), which payment, receipt or retention of funds is of a character required to be disclosed in the Registration Statement or the Prospectus.

(oo) Status Under the Securities Act. The Company was not and is not an ineligible issuer as defined in Rule 405 under the Securities Act at the times specified in Rules 164 and 433 under the Securities Act in connection with the offering of the Placement Shares.

(pp) No Misstatement or Omission in an Issuer Free Writing Prospectus. Each Issuer Free Writing Prospectus, as of its issue date and as of each Applicable Time (as defined in Section 24 below), did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any incorporated document deemed to be a part thereof that has not been superseded or modified. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Company by MLV specifically for use therein.

(qq) No Conflicts. Neither the execution of this Agreement by the Company, nor the issuance, offering or sale of the Placement Shares, nor the consummation by the Company of any of the transactions contemplated herein and therein, nor the compliance by the Company with the terms and provisions hereof and thereof will conflict with, or will result in a breach of, any of the terms and provisions of, or has constituted or will constitute a default under, or has resulted in or will result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to the terms of any contract or other agreement to which the Company may be bound or to which any of the property or assets of the Company is subject, except (i) such conflicts, breaches or defaults as may have been waived and (ii) such conflicts, breaches, defaults, liens, charges or encumbrances that would not reasonably be expected to have a Material Adverse Effect; nor will such action result (x) in any violation of the provisions of the certificate of incorporation or bylaws of the Company, or (y) in any material violation of the provisions of any statute or any order, rule or regulation applicable to the Company or of any court or of any federal, state or other regulatory authority or other government body having jurisdiction over the Company, except where such violation would not reasonably be expected to have a Material Adverse Effect.

(rr) Clinical Studies. The clinical, pre-clinical and other studies and tests conducted by or, to the knowledge of the Company, on behalf of the Company were, and, if still pending, are being, conducted in accordance in all material respects with all applicable statutes, laws, rules and regulations (including, without limitation, those administered by the United States Food and Drug Administration (the " FDA") or by any foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA), except where the failure do so would not have a Material Adverse Effect. The Company has not received any written notices or other written correspondence from the FDA or any other foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA requiring the Company to terminate or suspend any ongoing clinical or pre-clinical studies or tests.

(ss) Compliance Program. The Company has established and administers a compliance program applicable to the Company, to assist the Company and the directors, officers and employees of the Company in complying with applicable regulatory guidelines (including, without limitation, those administered by the FDA and any other foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA); except where such noncompliance would not reasonably be expected to have a Material Adverse Effect.

(tt) OFAC. (i) Neither the Company nor any of its Subsidiaries (collectively, the "Entity") or, to the Company's knowledge, any director, officer, employee, agent, affiliate or representative of the Entity, is a government, individual, or entity (in this paragraph (tt), " Person") that is, or is owned or controlled by a Person that is:

(A) the subject of any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control ("OFAC"), the United Nations Security Council ("UNSC"), the European Union ("EU"), Her Majesty's Treasury ("HMT"), or other relevant sanctions authority (collectively, "Sanctions"), nor

(B) located, organized or resident in a country or territory that is the subject of Sanctions (including, without limitation, Burma/Myanmar, Cuba, Iran, North Korea, Sudan and Syria).

(ii) The Company represents and covenants that the Entity will not, directly or indirectly, knowingly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Person:

(A) to fund or facilitate any activities or business of or with any Person or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions; or

(B) in any other manner that will result in a violation of Sanctions by any Person (including any Person participating in the offering, whether as underwriter, advisor, investor or otherwise).

(iii) The Company represents and covenants that, except as detailed in the Prospectus, for the past five years, the Entity has not knowingly engaged in, is not now knowingly engaged in, and will not knowingly engage in, any dealings or transactions with any Person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

(uu) Stock Transfer Taxes. On each Settlement Date, all stock transfer or other taxes (other than income taxes) which are required to be paid in connection with the sale and transfer of the Placement Shares to be sold hereunder will be, or will have been, fully paid or provided for by the Company and all laws imposing such taxes will be or will have been fully complied with in all material respects.

Any certificate signed by an officer of the Company and delivered to MLV or to counsel for MLV pursuant to or in connection with this Agreement shall be deemed to be a representation and warranty by the Company, as applicable, to MLV as to the matters set forth therein.

7. Covenants of the Company. The Company covenants and agrees with MLV that:

(a) Registration Statement Amendments. After the date of this Agreement and during any period in which a Prospectus relating to any Placement Shares is required to be delivered by MLV under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act) (the "Prospectus Delivery Period"), (i) the Company will notify MLV promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus (other than documents incorporated by reference therein) has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus or for additional information, (ii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus (except for documents incorporated by reference therein) unless a copy thereof has been submitted to MLV at least two Business Days before the filing and MLV has not reasonably and in good faith objected thereto within two Business Days of receiving such copy (provided, however, that (A) the failure of MLV to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect MLV's right to rely on the representations and warranties made by the Company in this Agreement, (B) the Company has no obligation to provide MLV any advance copy of such filing or to provide MLV an opportunity to object to such filing if such filing does not name MLV or does not relate to the transactions contemplated by this Agreement, and (C) the only remedy MLV shall have with respect to the failure by the Company to provide MLV with such copy or the filing of such amendment or supplement despite MLV's objection shall be to cease making sales under this Agreement) and the Company will furnish to MLV at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; and (iii) the Company will cause each amendment or supplement to the Prospectus to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act or, in the case of any document to be incorporated therein by reference, to be filed with the Commission as required pursuant to the Exchange Act, within the time period prescribed (the determination to file or not file any amendment or supplement with the Commission under this Section 7(a), based on the Company's reasonable opinion or reasonable objections, shall be made exclusively by the Company).

(b) Notice of Commission Stop Orders. The Company will advise MLV, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose; and it

will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. The Company will advise MLV promptly after it receives any request by the Commission for any amendments to the Registration Statement or any amendment or supplements to the Prospectus or any Issuer Free Writing Prospectus or for additional information related to the offering of the Placement Shares or for additional information related to the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus.

(c) Delivery of Prospectus; Subsequent Changes. During the Prospectus Delivery Period, the Company will use commercially reasonable efforts to comply in all material respects with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If the Company has omitted any information from the Registration Statement pursuant to Rule 430A under the Securities Act, it will use its best efforts to comply with the provisions of and make all requisite filings with the Commission pursuant to said Rule 430A and to notify MLV promptly of all such filings. If during the Prospectus Delivery Period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify MLV to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; provided, however, that the Company may delay any such amendment or supplement if, in the judgment of the Company, it is in the best interests of the Company to do so.

(d) Listing of Placement Shares. During the Prospectus Delivery Period, the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on the Exchange and to qualify the Placement Shares for sale under the securities laws of such jurisdictions as MLV reasonably designates and to continue such qualifications in effect so long as required for the distribution of the Placement Shares; provided, however, that the Company shall not be required in connection therewith to qualify as a foreign corporation or dealer in securities or file a general consent to service of process in any jurisdiction.

(e) Delivery of Registration Statement and Prospectus. The Company will furnish to MLV and its counsel (at the expense of the Company) copies of the Registration Statement, the Prospectus (including all documents incorporated by reference therein) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during the Prospectus Delivery Period (including all documents filed with the Commission during such period that are deemed to be incorporated by reference therein), in each case as soon as reasonably practicable and in such quantities as MLV may from time to time reasonably request and, at MLV's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; provided, however, that the Company shall not be required to furnish any document (other than the Prospectus) to MLV to the extent such document is available on EDGAR.

(f) Earnings Statement. The Company will make generally available to its security holders as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement covering a 12-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

(g) Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled " Use of Proceeds."

(h) Notice of Other Sales. Without the prior written consent of MLV, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the second (2nd) Trading Day immediately prior to the date on which any Placement Notice is delivered to MLV hereunder and ending on the second (2nd) Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, the date of such suspension or termination); and, at any time during which a Placement Notice is pending and for two (2) Trading Days after the last sale of Placement Shares under such Placement Notice, will not directly or indirectly in any other "at the market" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any shares of Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock prior to the termination of this Agreement with respect to Placement Shares sold pursuant to such Placement Notice; provided, however, that such restrictions will not be required in connection with the Company's issuance or sale of (i) Common Stock, options to purchase Common Stock or stock awards or Common Stock issuable upon the exercise of options or vesting of stock awards, pursuant to any employee or director stock option or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented; (ii) Common Stock issuable upon conversion of securities or the exercise of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to MLV and (iii) Common Stock, or securities convertible into or exercisable for Common Stock, offered and sold in a privately negotiated transaction to vendors, customers, investors, strategic partners or potential strategic partners and conducted in a manner so as not to be integrated with the offering of Common Stock hereby.

(i) Change of Circumstances. The Company will, at any time during the pendency of a Placement Notice advise MLV promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document required to be provided to MLV pursuant to this Agreement.

(j) Due Diligence Cooperation. The Company will cooperate with any reasonable due diligence review conducted by MLV or its representatives in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices or such other location mutually agreeable by the parties, as MLV may reasonably request.

(k) Required Filings Relating to Placement of Placement Shares. The Company agrees that on such dates as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act (the date of each and every such filing under Rule 424(b), a "Filing Date"), which prospectus supplement will set forth, within the relevant period, the amount of Placement Shares sold through MLV, the Net Proceeds to the Company and the compensation payable by the Company to MLV with respect to such Placement Shares, and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market.

(l) Representation Dates; Certificate. On the date of this Agreement and each time during the term of this Agreement the Company:

(i) files the Prospectus relating to the Placement Shares or amends or supplements (other than a prospectus supplement relating solely to an offering of securities other than the Placement Shares) the Registration Statement or the Prospectus relating to the Placement Shares by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of documents by reference into the Registration Statement or the Prospectus relating to the Placement Shares;

(ii) files an annual report on Form 10-K under the Exchange Act (including any Form 10-K/A containing restated financial statements or a material amendment to the previously filed Form 10-K);

(iii) files its quarterly reports on Form 10-Q under the Exchange Act; or

(iv) files a current report on Form 8-K containing amended audited financial information (other than information "furnished" pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) under the Exchange Act;

(Each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a " Representation Date")

the Company shall furnish MLV (but in the case of clause (iv) above only if MLV reasonably determines that the information contained in such Form 8-K is material) with a certificate, in the form attached hereto as Exhibit 7(l). The requirement to provide a certificate under this Section 7(l)

shall be automatically waived for any Representation Date occurring at a time at which no Placement Notice is pending, which waiver shall continue until the date the Company delivers a Placement Notice hereunder (which for such calendar quarter shall be considered a Representation Date); provided, however, that such waiver shall not apply for any Representation Date on which the Company files its annual report on Form 10-K. Notwithstanding the foregoing, if the Company subsequently decides to sell Placement Shares following a Representation Date when the Company relied on such waiver and did not provide MLV with a certificate under this Section 7(l), then before the Company delivers the Placement Notice or MLV sells any Placement Shares, the Company shall provide MLV with a certificate, in the form attached hereto as Exhibit 7(l), dated the date of the Placement Notice.

(m) Legal Opinion. On or prior to the date of the first Placement Notice given hereunder, the Company shall cause to be furnished to MLV a written opinion and letter of Cooley LLP, or such other counsel reasonably satisfactory to MLV ("Company Counsel"), covering opinions and statements substantially in the forms attached hereto as Exhibits 7(m)(1) and 7(m)(2). Thereafter within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(l) for which no waiver is applicable, the Company shall cause to be furnished to MLV a letter of Company Counsel covering statements substantially in the form attached hereto as Exhibits 7(m)(2), modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented; provided, however, the Company shall be required to furnish to MLV no more than one letter hereunder per calendar quarter and the Company shall not be required to furnish such letter if the Company does not intend to deliver a Placement Notice in such calendar quarter until such time as the Company delivers its next Placement Notice; provided, further, that in lieu of such letters for subsequent periodic filings under the Exchange Act, counsel may furnish MLV with a letter (a " Reliance Letter") to the effect that MLV may rely on a prior letter delivered under this Section 7(m) to the same extent as if it were dated the date of such letter (except that statements in such prior letter shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as of the date of the Reliance Letter). Notwithstanding anything to the contrary set forth herein, each obligation of the Company to cause to be furnished to MLV a letter of Company Counsel substantially in the form attached hereto as Exhibit 7(m)(2) shall be conditioned upon the concurrent delivery to MLV of a letter of LeClairRyan, or other counsel to MLV reasonably acceptable to MLV ("MLV Counsel"), covering statements substantially similar to those covered by such letter of Company Counsel.

(n) Comfort Letter. On or prior to the date the first Placement Notice is given hereunder and thereafter within five (5) Trading Days after each Representation Date referred to in Section 7(l)(ii), the Company shall cause its independent accountants to furnish MLV letters (the " Comfort Letters"), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(n); provided, that if requested by MLV, the Company shall cause a Comfort Letter to be furnished to MLV prior to the tenth (10th) Trading Day after the date of occurrence of any material transaction or event (including the restatement of the Company's financial statements) requiring the filing of a current report on Form 8-K containing material financial information and the date the first Placement Notice is given hereunder following such a material transaction or event, whichever is later. The Comfort Letter from the

Company's independent accountants shall be in a form and substance reasonably satisfactory to MLV, (i) confirming that they are an independent public accounting firm within the meaning of the Securities Act and the PCAOB, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants' "comfort letters" to underwriters in connection with registered public offerings (the first such letter, the "Initial Comfort Letter") and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

(o) Market Activities. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or might reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of Common Stock or (ii) sell, bid for, or purchase Common Stock in violation of Regulation M, or pay anyone any compensation for soliciting purchases of the Placement Shares other than MLV.

(p) Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that neither it nor any of its Subsidiaries will be or become, at any time prior to the termination of this Agreement, an "investment company," as such term is defined in the Investment Company Act.

(q) Sarbanes-Oxley Act. The Company and the Subsidiaries will maintain and keep accurate books and records reflecting their assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company's consolidated financial statements in accordance with generally accepted accounting principles, (iii) that receipts and expenditures of the Company are being made only in accordance with management's and the Company's directors' authorization, and (iv) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on its financial statements. The Company and the Subsidiaries will maintain such controls and other procedures, including, without limitation, those required by Sections 302 and 906 of the Sarbanes-Oxley Act, and the applicable regulations thereunder that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms, including, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure and to ensure that material information relating to the Company or the Subsidiaries is made known to them by others within those entities, particularly during the period in which such periodic reports are being prepared.

8. Representations and Covenants of MLV. MLV represents and warrants that it is duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which MLV is exempt from registration or such registration is not otherwise required. MLV shall continue, for the term of this Agreement, to be duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which MLV is exempt from registration or such registration is not otherwise required, during the term of this Agreement. MLV will comply with all applicable laws and regulations (including, without limitation, Regulation M) in connection with performing its obligations under this Agreement.

9. Payment of Expenses.

(a) The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation, filing, including any fees required by the Commission, and printing of the Registration Statement (including financial statements and exhibits) as originally filed and of each amendment and supplement thereto and each Issuer Free Writing Prospectus, in such number as MLV shall reasonably deem necessary, (ii) the printing and delivery to MLV of this Agreement and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (iii) the preparation, issuance and delivery of the certificates, if any, for the Placement Shares to MLV, including any stock or other transfer taxes and any capital duties, stamp duties or other duties or taxes payable upon the sale, issuance or delivery of the Placement Shares to MLV, (iv) the fees and disbursements of the counsel, accountants and other advisors to the Company, (v) the reasonable fees and disbursements of counsel to MLV, up to a maximum amount of $25,000, (vi) the fees and expenses of the transfer agent and registrar for the Common Stock, (vii) the filing fees incident to any review by FINRA of the terms of the sale of the Placement Shares, and (viii) the fees and expenses incurred in connection with the listing of the Placement Shares on the Exchange.

(b) If this Agreement is terminated by MLV in accordance with the provisions of Section 13(a) hereof as a result of a material breach by the Company of its obligations hereunder, the Company shall reimburse MLV for all of its reasonable out-of-pocket expenses, including reasonable fees and disbursements of counsel for MLV (less any amounts paid under clause (a)(v) above) up to a maximum of $25,000.

10. Conditions to MLV's Obligations. The obligations of MLV hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein, to the due performance by the Company of its obligations hereunder, to the completion by MLV of a due diligence review satisfactory to it in its reasonable judgment, and to the continuing satisfaction (or waiver by MLV in its sole discretion) of the following additional conditions:

(a) Registration Statement Effective. The Registration Statement shall have become effective and shall be available for the sale of all Placement Shares contemplated to be issued by any Placement Notice.

(b) No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state governmental authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus; (ii) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; or (iv) any event that makes any material statement made in the Registration Statement or the Prospectus or any material document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, the Prospectus or documents so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(c) No Misstatement or Material Omission. MLV shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in MLV's reasonable opinion is material, or omits to state a fact that in MLV's opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

(d) Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any material adverse change, on a consolidated basis, in the authorized capital stock of the Company or any Material Adverse Effect, or any development in the business or affairs of the Company that could reasonably be expected to cause a Material Adverse Effect.

(e) Legal Opinion. MLV shall have received the opinions of Company Counsel and MLV Counsel required to be delivered pursuant Section 7(m) on or before the date on which such delivery of such opinions are required pursuant to Section 7(m).

(f) Comfort Letter. MLV shall have received the Comfort Letter required to be delivered pursuant Section 7(n) on or before the date on which such delivery of such letter is required pursuant to Section 7(n).

(g) Representation Certificate. MLV shall have received the certificate required to be delivered pursuant to Section 7(l) on or before the date on which delivery of such certificate is required pursuant to Section 7(l).

(h) No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange and the Common Stock shall not have been delisted from the Exchange.

(i) Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(l), the Company shall have furnished to MLV such appropriate further information, certificates and documents as MLV may have reasonably requested in writing prior to such date and which are usually and customarily furnished by an issuer of securities in connection with the underwritten public offering thereof. All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof. The Company will furnish MLV with such conformed copies of such opinions, certificates, letters and other documents as MLV shall reasonably request.

(j) Securities Act Filings Made. All filings with the Commission required by Rule 424 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424.

(k) Approval for Listing. The Placement Shares shall either have been approved for listing on the Exchange, subject only to notice of issuance, or the Company shall have filed an application for listing of the Placement Shares on the Exchange at, or prior to, the issuance of any Placement Notice.

(l) No Termination Event. There shall not have occurred any event that would permit MLV to terminate this Agreement pursuant to Section 13(a).

11. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless MLV, its partners, members, directors, officers, employees and agents and each person, if any, who controls MLV within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any untrue statement or alleged untrue statement of a material fact included in the any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; provided that (subject to Section 11(d) below) any such settlement is effected with the written consent of the Company, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as incurred (including the reasonable fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, to the extent that any such expense is not paid under (i) or (ii) above, provided, however , that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission or alleged untrue statement or omission made solely in reliance upon and in conformity with written information furnished to the Company by MLV expressly for use in the Registration Statement (or any amendment thereto) or in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto).

(b) MLV Indemnification. MLV agrees to indemnify and hold harmless the Company and its directors and each officer of the Company who signed the Registration Statement, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 11(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendments thereto) or any Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with information furnished to the Company in writing by MLV expressly for use therein.

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 11 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 11, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 11 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 11 unless, and only to the extent that, such omission results in the forfeiture or material impairment of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the

indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly after the indemnifying party receives a written invoice relating to fees, disbursements and other charges in reasonable detail. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 11 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party from all liability arising out of such litigation, investigation, proceeding or claim and (2) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

(d) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 11 is applicable in accordance with its terms but for any reason is held to be unavailable from the Company or MLV, the Company and MLV will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than MLV, such as persons who control the Company within the meaning of the Securities Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution) to which the Company and MLV may be subject in such proportion as shall be appropriate to reflect the relative benefits received by

the Company on the one hand and MLV on the other hand. The relative benefits received by the Company on the one hand and MLV on the other hand shall be deemed to be in the same proportion as the total net proceeds from the sale of the Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by MLV (before deducting expenses) from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and MLV, on the other hand, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or MLV, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and MLV agree that it would not be just and equitable if contributions pursuant to this Section 11(d) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 11(d) shall be deemed to include, for the purpose of this Section 11(d), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 11(c) hereof. Notwithstanding the foregoing provisions of this Section 11(d), MLV shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 11(d), any person who controls a party to this Agreement within the meaning of the Securities Act, and any officers, directors, partners, employees or agents of MLV, will have the same rights to contribution as that party, and each officer and director of the Company who signed the Registration Statement will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 11(d), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 11(d) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 11(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 11(c) hereof.

12. Representations and Agreements to Survive Delivery . The indemnity and contribution agreements contained in Section 11 of this Agreement and all representations and warranties of the Company and MLV herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of

MLV, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

13. Termination.

(a) MLV may terminate this Agreement, by notice to the Company, as hereinafter specified at any time (1) if there has been, since the time of execution of this Agreement or since the date as of which information is given in the Prospectus, any Material Adverse Effect, or any development that has occurred that is reasonably likely to have a Material Adverse Effect has occurred or in the sole judgment of MLV makes it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (2) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the sole judgment of MLV, impracticable or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (3) if trading in the Common Stock has been suspended or limited by the Commission or the Exchange, or if trading generally on the Exchange has been suspended or limited, or minimum prices for trading have been fixed on the Exchange, (4) if any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be continuing for at least ten (10) Trading Days, (5) if a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing, or (6) if a banking moratorium has been declared by either U.S. Federal or New York authorities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination. If MLV elects to terminate this Agreement as provided in this Section 13(a), MLV shall provide the required notice as specified in Section 14 (Notices).

(b) The Company shall have the right, by giving ten (10) days notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(c) MLV shall have the right, by giving ten (10) days notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(d) Unless earlier terminated pursuant to this Section 13, this Agreement shall automatically terminate upon the earlier to occur of (i) the third (3 rd) year anniversary of the

date hereof and (ii) the issuance and sale of all of the Placement Shares through MLV on the terms and subject to the conditions set forth herein except that the provisions of Section 9, Section 11, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(e) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 13(a), (b), (c), or (d) above or otherwise by mutual agreement of the parties; provided, however, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 9, Section 11, Section 12, Section 18 and Section 19 shall remain in full force and effect. Upon termination of this Agreement, the Company shall not have any liability to MLV for any discount, commission or other compensation with respect to any Placement Shares not otherwise sold by MLV under this Agreement.

(f) Any termination of this Agreement shall be effective on the date specified in such notice of termination; provided, however, that such termination shall not be effective until the close of business on the date of receipt of such notice by MLV or the Company, as the case may be. If such termination shall occur prior to the Settlement Date for any sale of Placement Shares, such Placement Shares shall settle in accordance with the provisions of this Agreement.

14. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified, and if sent to MLV, shall be delivered to:

MLV & Co. LLC
1251 Avenue of the Americas, 41st Floor
New York, NY 10020
Attention: General Counsel
Telephone: (212) 542-5870
Facsimile: (212) 317-1515

with a copy to:

LeClairRyan, A Professional Corporation
One Riverfront Plaza
1037 Raymond Boulevard, 16th Floor
Newark, NJ 07102
Attention: James T. Seery
Telephone: (973) 491-3315
Facsimile: (973) 491-3415

and if to the Company, shall be delivered to:

MannKind Corporation
28903 North Avenue Paine
Valencia, CA 91355
Attention: General Counsel
Telephone (661) 775-5350
Facsimile: (661) 775-2086

with a copy to:

Cooley LLP
4401 Eastgate Mall
San Diego, CA 92121
Attention: L. Kay Chandler
Sean M. Clayton
Telephone: (858) 550-6000
Facsimile: (858) 550-6420

Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally or by verifiable facsimile transmission (with an original to follow) on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) on the next Business Day after timely delivery to a nationally-recognized overnight courier and (iii) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, " Business Day" shall mean any day on which the Exchange and commercial banks in the City of New York are open for business.

An electronic communication ("Electronic Notice") shall be deemed written notice for purposes of this Section 14 if sent to the electronic mail address specified by the receiving party under separate cover. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives confirmation of receipt by the receiving party. Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("Nonelectronic Notice") which shall be sent to the requesting party within ten (10) days of receipt of the written request for Nonelectronic Notice.

15. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and MLV and their respective successors and the affiliates, controlling persons, officers and directors referred to in Section 11 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party.

16. Adjustments for Stock Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any share consolidation, stock split, stock dividend, corporate domestication or similar event effected with respect to the Placement Shares.

17. Entire Agreement; Amendment; Severability . This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto) constitutes the entire agreement of the parties with respect to the subject matter hereof and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and MLV. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement.

18. GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL. THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. THE COMPANY HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

19. CONSENT TO JURISDICTION. EACH PARTY HEREBY IRREVOCABLY SUBMITS TO THE NON-EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH ANY TRANSACTION CONTEMPLATED HEREBY, AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT, THAT SUCH SUIT, ACTION OR PROCEEDING IS BROUGHT IN AN INCONVENIENT FORUM OR THAT THE VENUE OF SUCH SUIT, ACTION OR PROCEEDING IS IMPROPER. EACH PARTY HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF (CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED) TO SUCH PARTY AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THIS AGREEMENT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW.

20. Use of Information. MLV may not use any information gained in connection with this Agreement and the transactions contemplated by this Agreement, including due diligence, to advise any party with respect to transactions not expressly approved by the Company.

21. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by facsimile transmission.

22. Effect of Headings. The section and Exhibit headings herein are for convenience only and shall not affect the construction hereof.

23. Permitted Free Writing Prospectuses. The Company represents, warrants and agrees that, unless it obtains the prior consent of MLV (such consent not to be unreasonably withheld, conditioned or delayed), and MLV represents, warrants and agrees that, unless it obtains the prior consent of the Company (such consent not to be unreasonably withheld, conditioned or delayed), it has not made and will not make any offer relating to the Placement Shares that would constitute an Issuer Free Writing Prospectus, or that would otherwise constitute a "free writing prospectus," as defined in Rule 405, required to be filed with the Commission. Any such free writing prospectus consented to by MLV or by the Company, as the case may be, is hereinafter referred to as a "Permitted Free Writing Prospectus." The Company represents and warrants that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an "issuer free writing prospectus," as defined in Rule 433, and has complied and will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping. For the purposes of clarity, the parties hereto agree that all free writing prospectuses, if any, listed in Exhibit 23 hereto are Permitted Free Writing Prospectuses.

24. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

(a) MLV is acting solely as agent in connection with the public offering of the Placement Shares and in connection with each transaction contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and MLV, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether or not MLV has advised or is advising the Company on other matters, and MLV has no obligation to the Company with respect to the transactions contemplated by this Agreement except the obligations expressly set forth in this Agreement;

(b) it is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) MLV has not provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement and it has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

(d) it is aware that MLV and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and MLV has no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

(e) it waives, to the fullest extent permitted by law, any claims it may have against MLV for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the sale of Placement Shares under this Agreement and agrees that MLV shall not have any liability (whether direct or indirect, in contract, tort or otherwise) to it in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on its behalf or in right of it or the Company, employees or creditors of Company, other than in respect of MLV's obligations under this Agreement and to keep information provided by the Company to MLV and MLV's counsel confidential to the extent not otherwise publicly-available.

25. Definitions. As used in this Agreement, the following terms have the respective meanings set forth below:

"Applicable Time" means (i) each Representation Date and (ii) the time of each sale of any Placement Shares pursuant to this Agreement.

"Issuer Free Writing Prospectus" means any "issuer free writing prospectus," as defined in Rule 433, relating to the Placement Shares that (1) is required to be filed with the Commission by the Company, (2) is a "road show" that is a "written communication" within the meaning of Rule 433(d)(8)(i) whether or not required to be filed with the Commission, or (3) is exempt from filing pursuant to Rule 433(d)(5)(i) because it contains a description of the Placement Shares or of the offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company's records pursuant to Rule 433(g) under the Securities Act Regulations.

"Rule 164," "Rule 172," "Rule 405," "Rule 415," "Rule 424," "Rule 424(b)," "Rule 430B," and "Rule 433" refer to such rules under the Securities Act Regulations.

All references in this Agreement to financial statements and schedules and other information that is "contained," "included" or "stated" in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information that is incorporated by reference in the Registration Statement or the Prospectus, as the case may be.

All references in this Agreement to the Registration Statement, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to EDGAR; all references in this Agreement to any Issuer Free Writing Prospectus (other than any Issuer Free Writing Prospectuses that, pursuant to Rule 433, are not required to be filed with the Commission) shall be deemed to include the copy thereof filed with the Commission pursuant to EDGAR; and all references in this Agreement to "supplements" to the Prospectus shall include, without limitation, any supplements, "wrappers" or similar materials prepared in connection with any offering, sale or private placement of any Placement Shares by MLV outside of the United States.

[Remainder of page intentionally left blank]

If the foregoing correctly sets forth the understanding between the Company and MLV, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and MLV.

Very truly yours,

MANNKIND CORPORATION

By: /s/ Matthew J. Pfeffer
Name: Matthew J. Pfeffer
Title: Chief Financial Officer

ACCEPTED as of the date first-above written:

MLV & CO. LLC

By: /s/ Patrice McNicoll
Name: Patrice McNicoll
Title: Chief Executive Officer

SCHEDULE 1

FORM OF PLACEMENT NOTICE

From: MannKind Corporation

To: MLV & Co. LLC

Attention: Patrice McNicoll

Subject: At-The-Market Issuance—Placement Notice

Gentlemen:

Pursuant to the terms and subject to the conditions contained in the At-The-Market Issuance Sales Agreement between MannKind Corporation, a Delaware corporation (the "Company"), and MLV & Co. LLC ("MLV"), dated March 3, 2014, the Company hereby requests that MLV sell up to of the Company's Common Stock, par value $0.01 per share, at a minimum market price of $ per share, during the time period beginning [month, day, time] and ending [month, day, time]. [The Company may include such other sales parameters as it deems appropriate.]

SCHEDULE 2

Compensation

The Company shall pay to MLV in cash, upon each sale of Placement Shares pursuant to this Agreement, an amount up to 3.0% of the gross proceeds from each sale of Placement Shares.

SCHEDULE 3

Notice Parties

The Company

Matthew Pfeffer	mpfeffer@mannkindcorp.com
David Thomson	dthomson@mannkindcorp.com
Hakan Edstrom	hedstrom@mannkindcorp.com

MLV

Randy Billhardt	rbillhardt@mlvco.com
Dean Colucci	dcolucci@mlvco.com
Ryan Loforte	rloforte@mlvco.com
Patrice McNicoll	pmcnicoll@mlvco.com
Miranda Toledano	mtoledano@mlvco.com

With a copy to mlvatmdesk@mlvco.com

SCHEDULE 4

Subsidiaries

None.

EXHIBIT 7(l)

Form of Representation Date Certificate

This Officers Certificate (this "Certificate") is executed and delivered in connection with Section 7(l) of the At-The-Market Issuance Sales Agreement (the "Agreement"), dated March 3, 2014, and entered into between MannKind Corporation (the " Company") and MLV & Co. LLC. All capitalized terms used but not defined herein shall have the meanings given to such terms in the Agreement.

The undersigned, a duly appointed and authorized officer of the Company, having made reasonable inquiries to establish the accuracy of the statements below and having been authorized by the Company to execute this certificate on behalf of the Company, hereby certifies, on behalf of the Company and not in the undersigned's individual capacity, as follows:

1. As of the date of this Certificate, (i) the Registration Statement does not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading and (ii) neither the Registration Statement nor the Prospectus contains any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading and (iii) no event has occurred as a result of which it is necessary to amend or supplement the Prospectus in order to make the statements therein not untrue or misleading for (i) and (ii) to be true.

2. Each of the representations and warranties of the Company contained in the Agreement was true and correct in all material respects, when originally made, and, except for those representations and warranties that speak solely as of a specific date, is true and correct as of the date of this Certificate.

3. Except as waived by MLV in writing, each of the covenants required to be performed by the Company in the Agreement on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement, has been duly, timely and fully performed in all material respects and each condition required to be complied with by the Company on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement has been duly, timely and fully complied with in all material respects.

4. No stop order suspending the effectiveness of the Registration Statement or of any part thereof has been issued, and, to the Company's knowledge, no proceedings for that purpose have been instituted or are pending or threatened by any securities or other governmental authority (including, without limitation, the Commission).

5. No order suspending the effectiveness of the Registration Statement or the qualification or registration of the Placement Shares under the securities or Blue Sky laws of any jurisdiction are in effect and no proceeding for such purpose is pending before, or threatened, to the Company's knowledge or in writing by, any securities or other governmental authority (including, without limitation, the Commission).

The undersigned has executed this Officer's Certificate on behalf of the Company as of the date first written above.

MANNKIND CORPORATION

By: _____
Name: _____
Title: _____

EXHIBIT 7(m)(1)

Form of Legal Opinion

EXHIBIT 7(m)(2)

Form of Legal Letter

Exhibit 23

Permitted Free Writing Prospectus

None.

Exhibit 10.32

MANNKIND CORPORATION

Common Stock
(par value $0.01 per share)

At-The-Market Issuance Sales Agreement

March 3, 2014

Meyers Associates, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P.)
3 Columbus Circle, 15th Floor
New York, NY 10019
Ladies and Gentlemen:

MannKind Corporation, a Delaware corporation (the "Company"), confirms its agreement (this "Agreement") with Meyers Associates, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P. ("BP"), as follows:

1. Issuance and Sale of Shares. The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell through BP, shares (the "Placement Shares") of the Company's common stock, par value $0.01 per share (the "Common Stock"), up to an aggregate offering price of $50,000,000 less the aggregate offering price of any Common Stock sold pursuant to the Concurrent Facility Agreement (as defined below), *provided however*, that in no event shall the Company issue or sell through BP such number of Placement Shares that (a) would cause the Company to not satisfy the eligibility requirements for use of Form S-3 (including Instruction I.B.6. thereof), (b) exceeds the number of shares of Common Stock registered on the effective Registration Statement (as defined below) pursuant to which the offering is being made or (c) exceeds the number of authorized but unissued shares of the Company's Common Stock (the lesser of (a), (b) and (c), the " Maximum Amount"). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this Section 1 on the amount of Placement Shares issued and sold under this Agreement shall be the sole responsibility of the Company and that BP shall have no obligation in connection with such compliance. The issuance and sale of Placement Shares through BP will be effected pursuant to the Registration Statement filed by the Company and declared effective by the Securities and Exchange Commission (the "Commission"), although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue any Placement Shares.

The Company has filed, in accordance with the provisions of the Securities Act of 1933, as amended (the " Securities Act"), and the rules and regulations thereunder (the "Securities Act Regulations"), with the Commission a registration statement on Form S-3 (File No. 333-183679), including a base prospectus, relating to certain securities, including the Placement Shares to be issued from time to time by the Company, and which incorporates by reference

documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended (the " Exchange Act"), and the rules and regulations thereunder. The Company has prepared a prospectus supplement specifically relating to the Placement Shares (the " Prospectus Supplement") to the base prospectus included as part of such registration statement. The Company will furnish to BP, for use by BP, copies of the prospectus included as part of such registration statement, as supplemented by the Prospectus Supplement, relating to the Placement Shares. Except where the context otherwise requires, such registration statement, including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act Regulations or deemed to be a part of such registration statement pursuant to Rule 430B of the Securities Act Regulations, is herein called the " Registration Statement." The base prospectus, including all documents incorporated therein by reference, included in the Registration Statement, as it may be supplemented by the Prospectus Supplement, in the form in which such prospectus and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act Regulations, is herein called the " Prospectus." Any reference herein to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated by reference therein, and any reference herein to the terms "amend," "amendment" or "supplement" with respect to the Registration Statement or the Prospectus shall be deemed to refer to and include the filing after the execution hereof of any document with the Commission deemed to be incorporated by reference therein (the " Incorporated Documents").

For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include the most recent copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval System, or if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, " EDGAR").

2. Placements. Each time that the Company wishes to issue and sell Placement Shares hereunder (each, a " Placement"), it will notify BP by email notice (or other method mutually agreed to in writing by the parties) of the proposed terms of such Placement, which shall include at a minimum the number of Placement Shares to be issued, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one day and any minimum price below which sales may not be made (a " Placement Notice"), the form of which is attached hereto as Schedule 1. The Placement Notice shall originate from any of the individuals from the Company set forth on Schedule 3 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from BP set forth on Schedule 3, as such Schedule 3 may be amended from time to time. The Placement Notice shall be effective unless and until (i) BP declines to accept the terms contained therein for any reason, in its sole discretion by email notice to the Company within one Business Day (as defined below) from the time the Placement Notice is received, (ii) the entire amount of the Placement Shares thereunder have been sold, (iii) the Company suspends or terminates the Placement Notice or (iv) this Agreement has been terminated under the provisions of Section 13. The amount of any discount, commission or other compensation to be paid by the Company to BP in connection with the sale of the Placement

Shares shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor BP will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to BP and BP does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3. Sale of Placement Shares by BP.

(a) Subject to the terms and conditions of this Agreement, for the period specified in the Placement Notice, BP will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the NASDAQ Global Market (the "Exchange"), to sell the Placement Shares up to the amount specified, and otherwise in accordance with the terms of such Placement Notice. BP will provide written confirmation to the Company no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the compensation payable by the Company to BP pursuant to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by BP (as set forth in Section 5(b)) from the gross proceeds that it receives from such sales. Subject to the terms of the Placement Notice, BP shall sell Placement Shares only by methods deemed to be an "at the market" offering as defined in Rule 415 of the Securities Act Regulations, including without limitation sales made directly on the Exchange, on any other existing trading market for the Common Stock or to or through a market maker. Subject to the terms of the Placement Notice and only with the Company's prior written consent, BP may also sell Placement Shares by any other method permitted by law, including but not limited to in negotiated transactions. "Trading Day" means any day on which shares of Common Stock are purchased and sold on the Exchange.

(b) During the term of this Agreement, neither BP nor any of its affiliates or subsidiaries shall engage in (i) any short sale of any security of the Company, (ii) any sale of any security of the Company that BP does not own or any sale which is consummated by the delivery of a security of the Company borrowed by, or for the account of, BP or (iii) any market making bidding, stabilization or other trading activity with respect to the Common Stock or related derivative securities if such activity would be prohibited under Regulation M or other anti-manipulation rules under the Securities Act. Neither BP nor any of its affiliates or subsidiaries shall engage in any proprietary trading or trading for BP's (or its affiliates' or subsidiaries') own account.

4. Suspension of Sales. The Company or BP may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party set forth on Schedule 3), suspend any sale of Placement Shares;

provided, however, that such suspension shall not affect or impair any party's obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. Each of the parties agrees that no such notice under this Section 4 shall be effective against any other party unless it is made to one of the individuals named on Schedule 3 hereto, as such Schedule may be amended from time to time.

5. Sale and Delivery to BP; Settlement.

(a) Sale of Placement Shares. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, unless BP declines to accept the terms of a Placement Notice, and unless the sale of the Placement Shares described therein has been declined, suspended, or otherwise terminated in accordance with the terms of this Agreement, BP, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such Placement Shares up to the amount specified in, and otherwise in accordance with, the terms of such Placement Notice. The Company acknowledges and agrees that (i) there can be no assurance that BP will be successful in selling Placement Shares, (ii) BP will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by BP to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares as required under this Agreement and (iii) BP shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement, except as otherwise agreed by BP and the Company.

(b) Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the third (3rd) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a "Settlement Date"). The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the " Net Proceeds") will be equal to the aggregate sales price received by BP, after deduction for (i) BP's commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, and (ii) any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales.

(c) Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting BP's or its designee's account (provided BP shall have given the Company written notice of such designee a reasonable period of time prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. On each Settlement Date, BP will deliver the related Net Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. If the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date through no fault of BP, the Company agrees that in addition to and in no way limiting the rights and obligations set forth in Section 11(a) hereto, it will (i) hold BP harmless

against any loss, claim, damage, or expense (including reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to BP (without duplication) any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

(d) Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate gross sales proceeds of Placement Shares sold pursuant to this Agreement would exceed the lesser of (A) together with all sales of Placement Shares under this Agreement, the Maximum Amount and (B) the amount authorized from time to time to be issued and sold under this Agreement by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to BP in writing. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to this Agreement at a price lower than any minimum price authorized from time to time by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to BP in writing.

6. Representations and Warranties of the Company. Except as disclosed in the Registration Statement or the Prospectus (including Incorporated Documents), the Company represents and warrants to, and agrees with BP that as of the date of this Agreement and as of each Applicable Time (as defined below), unless such representation, warranty or agreement specifies a different time:

(a) Registration Statement and Prospectus. The Company and, assuming no act or omission on the part of BP that would make such statement untrue, the transactions contemplated by this Agreement meet the requirements for and comply with the conditions for the use of Form S-3 under the Securities Act. The Registration Statement has been filed with the Commission and has been declared effective under the Securities Act. The Prospectus Supplement will name BP as an agent in the section entitled "Plan of Distribution." The Company has not received, and has no notice of, any order of the Commission preventing or suspending the use of the Registration Statement, or threatening or instituting proceedings for that purpose. The Registration Statement and the offer and sale of Placement Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said Rule. Any statutes, regulations, contracts or other documents that are required to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement have been so described or filed. Copies of the Registration Statement, the Prospectus, and any such amendments or supplements and all documents incorporated by reference therein that were filed with the Commission on or prior to the date of this Agreement have been delivered, or are available through EDGAR, to BP and its counsel. The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the distribution of the Placement Shares, will not distribute any offering material in connection with the offering or sale of the Placement Shares other than the Registration Statement and the Prospectus and any Issuer Free Writing Prospectus (as defined below) to which BP has consented, such consent not to be unreasonably withheld, conditioned or delayed. The Common Stock is currently quoted on the Exchange under the trading symbol "MNKD". The Company has not, in the 12 months preceding the date hereof, received notice

from the Exchange to the effect that the Company is not in compliance with the listing or maintenance requirements and the Company has no reason to believe that it will not in the foreseeable future continue to be in compliance with all such listing and maintenance requirements.

(b) No Misstatement or Omission. The Registration Statement, when it became effective, and the Prospectus, and any amendment or supplement thereto, on the date of such Prospectus or amendment or supplement, conformed and will conform in all material respects with the requirements of the Securities Act. At each Settlement Date, the Registration Statement and the Prospectus, as of such date, will conform in all material respects with the requirements of the Securities Act. The Registration Statement, when it became effective, did not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus and any amendment and supplement thereto, on the date thereof and at each Applicable Time (defined below), did not or will not include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading. The documents incorporated by reference in the Prospectus or any Prospectus Supplement did not, and any further documents filed and incorporated by reference therein will not, when filed with the Commission, contain an untrue statement of a material fact or omit to state a material fact required to be stated in such document or necessary to make the statements in such document, in light of the circumstances under which they were made, not misleading. The foregoing shall not apply to statements in, or omissions from, any such document made in reliance upon, and in conformity with, information furnished to the Company by BP specifically for use in the preparation thereof.

(c) Conformity with Securities Act and Exchange Act . The Registration Statement, the Prospectus, or any amendment or supplement thereto, and the documents incorporated by reference in the Registration Statement, the Prospectus or any amendment or supplement thereto, when such documents were or are filed with the Commission under the Securities Act or the Exchange Act or became or become effective under the Securities Act, as the case may be, conformed or will conform in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable.

(d) Financial Information. The consolidated financial statements of the Company included or incorporated by reference in the Registration Statement and the Prospectus, together with the related notes and schedules, present fairly, in all material respects, the consolidated financial position of the Company and the Subsidiaries (as defined below) as of the dates indicated and the consolidated results of operations, cash flows and changes in stockholders' equity of the Company for the periods specified (subject, in the case of unaudited statements, to normal year-end audit adjustments) and have been prepared in compliance with the requirements of the Securities Act and Exchange Act, as applicable, and in conformity with GAAP (as defined below) applied on a consistent basis (except for such adjustments to accounting standards and practices as are noted therein and except in the case of unaudited financial statements to the extent they may exclude footnotes or may be condensed or summary statements) during the periods involved; the other financial and statistical data with respect to the Company and the Subsidiaries contained or incorporated by reference in the Registration

Statement and the Prospectus are accurately and fairly presented and prepared on a basis consistent with the financial statements and books and records of the Company; there are no financial statements (historical or pro forma) that are required to be included or incorporated by reference in the Registration Statement or the Prospectus that are not included or incorporated by reference as required; the Company and the Subsidiaries do not have any material liabilities or obligations, direct or contingent (including any off-balance sheet obligations), not described in the Registration Statement (including the exhibits thereto and Incorporated Documents) and the Prospectus which are required to be described in the Registration Statement or the Prospectus (including exhibits thereto and Incorporated Documents); and all disclosures contained or incorporated by reference in the Registration Statement and the Prospectus regarding "non-GAAP financial measures" (as such term is defined by the rules and regulations of the Commission) comply in all material respects with Regulation G of the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable;

(e) Conformity with EDGAR Filing. The Prospectus delivered to BP for use in connection with the sale of the Placement Shares pursuant to this Agreement will be identical to the versions of the Prospectus created to be transmitted to the Commission for filing via EDGAR, except to the extent permitted by Regulation S-T.

(f) Organization. The Company and each of its Subsidiaries are, and will be, duly organized, validly existing as a corporation and in good standing under the laws of their respective jurisdictions of organization. The Company and each of its Subsidiaries are, and will be, duly licensed or qualified as a foreign corporation for transaction of business and in good standing under the laws of each other jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such license or qualification, and have all corporate power and authority necessary to own or hold their respective properties and to conduct their respective businesses as described in the Registration Statement and the Prospectus, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect or would reasonably be expected to have a material adverse effect on the assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders' equity (as set forth on the Company's most recent balance sheet included in the Incorporated Documents) or results of operations of the Company and the Subsidiaries (as defined below) taken as a whole (a " Material Adverse Effect").

(g) Subsidiaries. Schedule 4 hereto sets forth each of the Company's significant subsidiaries (as such term is defined in Rule 1-02 of Regulation S-X promulgated by the Commission), if any (each such significant subsidiary, a " Subsidiary" and collectively, the "Subsidiaries"). Except as set forth in the Registration Statement and in the Prospectus, the Company owns, directly or indirectly, all of the equity interests of the Subsidiaries free and clear of any lien, charge, security interest, encumbrance, right of first refusal or other restriction, and all the equity interests of the Subsidiaries are validly issued and are fully paid, nonassessable and free of preemptive and similar rights.

(h) No Violation or Default. Neither the Company nor any of its Subsidiaries is (i) in violation of its charter or by-laws or similar organizational documents; (ii) in default, and

no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its Subsidiaries is a party or by which the Company or any of its Subsidiaries is bound or to which any of the property or assets of the Company or any of its Subsidiaries are subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of each of clauses (ii) and (iii) above, for any such violation or default that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. To the Company's knowledge, no other party under any material contract or other agreement to which it or any of its Subsidiaries is a party is in default in any respect thereunder where such default would have a Material Adverse Effect.

(i) No Material Adverse Change. Subsequent to December 31, 2013, and other than the Company's execution of this Agreement and the sale of any Placement Shares hereunder and the Company's execution of an At-The-Market Issuance Sales Agreement substantially similar to this Agreement with MLV & Co. LLC (the "Concurrent Facility Agreement") and the sale of any shares of the Company's common stock thereunder, there has not been (i) any Material Adverse Effect, (ii) any transaction which is material to the Company and the Subsidiaries taken as a whole, (iii) any obligation or liability, direct or contingent (including any off-balance sheet obligations), incurred by the Company or any Subsidiary, which is material to the Company and the Subsidiaries taken as a whole, (iv) any material change in the capital stock or outstanding long-term indebtedness of the Company or any of its Subsidiaries or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company or any Subsidiary, other than in each case above (A) in the ordinary course of business, (B) as otherwise disclosed in the Registration Statement or Prospectus (including any document deemed incorporated by reference therein) or (C) where such matter, item, change or development would not make the statements in the Registration Statement or the Prospectus contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading.

(j) Capitalization. The issued and outstanding shares of capital stock of the Company have been validly issued, are fully paid and non-assessable and, other than as disclosed in or contemplated by the Registration Statement or the Prospectus, and are not subject to any preemptive rights, rights of first refusal or similar rights. The Company has an authorized, issued and outstanding capitalization as set forth in the Registration Statement and the Prospectus as of the dates referred to therein (other than the grant of additional options or other equity awards under the Company's existing stock option plans, or changes in the number of outstanding shares of Common Stock of the Company due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, shares of Common Stock outstanding on the date hereof or described in the Registration Statement and the Prospectus (including any document deemed incorporated by reference therein) or as a result of the issuance of Placement Shares or shares of the Company's common stock under the Concurrent Facility Agreement) and such authorized capital stock conforms in all material respects to the description thereof set forth in the Registration Statement and the Prospectus. The description of the Common Stock in the Registration Statement and the Prospectus (including any document

deemed incorporated by reference therein) is complete and accurate in all material respects. Other than as set forth or described in the Registration Statement and the Prospectus, as of the dates referred to therein, the Company did not have outstanding any options to purchase, or any rights or warrants to subscribe for, or any securities or obligations convertible into, or exchangeable for, or any contracts or commitments to issue or sell, any shares of capital stock or other securities.

(k) Authorization; Enforceability. The Company has full legal right, power and authority to enter into this Agreement and perform the transactions contemplated hereby. This Agreement has been duly authorized, executed and delivered by the Company and is a legal, valid and binding agreement of the Company enforceable against the Company in accordance with its terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification and contribution provisions of Section 11 hereof may be limited by federal or state securities laws and public policy considerations in respect thereof.

(l) Authorization of Placement Shares. The Placement Shares, when issued and delivered pursuant to the terms approved by the board of directors of the Company or a duly authorized committee thereof, or a duly authorized executive committee, against payment therefor as provided herein, will be duly and validly authorized and issued and fully paid and nonassessable, free and clear of any pledge, lien, encumbrance, security interest or other claim (other than any pledge, lien, encumbrance, security interest or other claim arising from an act or omission of BP or a purchaser), including any statutory or contractual preemptive rights, resale rights, rights of first refusal or other similar rights, and will be registered pursuant to Section 12 of the Exchange Act. The Placement Shares, when issued, will conform in all material respects to the description thereof set forth in or incorporated into the Prospectus.

(m) No Consents Required. No consent, approval, authorization, order, registration or qualification of or with any court or arbitrator or any governmental or regulatory authority is required for the execution, delivery and performance by the Company of this Agreement, and the issuance and sale by the Company of the Placement Shares as contemplated hereby, except for the registration of the Placement Shares under the Securities Act and such consents, approvals, authorizations, orders and registrations or qualifications as may be required under applicable state securities laws or by the by-laws and rules of the Financial Industry Regulatory Authority ("FINRA") or the Exchange in connection with the sale of the Placement Shares by BP.

(n) No Preferential Rights. Except as set forth in the Registration Statement and the Prospectus, (i) no person, as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act (each, a "Person"), has the right, contractual or otherwise, to cause the Company to issue or sell to such Person any shares of Common Stock or shares of any other capital stock or other securities of the Company (other than upon the exercise of options or warrants to purchase Common Stock or upon the exercise of options or stock awards that may be granted from time to time under the Company's stock option plans), (ii) no Person has any preemptive rights, rights of first refusal, or any other rights (whether pursuant to a

"poison pill" provision or otherwise) to purchase any shares of Common Stock or shares of any other capital stock or other securities of the Company from the Company which have not been duly waived with respect to the offering contemplated hereby, (iii) except as may be disclosed to BP in writing, no Person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Common Stock, and (iv) no Person has the right, contractual or otherwise, to require the Company to register under the Securities Act any shares of Common Stock or shares of any other capital stock or other securities of the Company, or to include any such shares or other securities in the Registration Statement or the offering contemplated thereby, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Placement Shares as contemplated thereby or otherwise.

(o) Independent Public Accountants. Deloitte & Touche LLP, whose report on the consolidated financial statements of the Company is filed with the Commission as part of the Company's most recent Annual Report on Form 10-K filed with the Commission and incorporated into the Registration Statement, is and, during the periods covered by its reports, was an independent public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board (United States). To the Company's knowledge, Deloitte & Touche LLP is not in violation of the auditor independence requirements of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act") with respect to the Company.

(p) Enforceability of Agreements. To the Company's knowledge, all agreements between the Company and third parties expressly referenced in the Prospectus, other than such agreements that have expired by their terms or whose termination is disclosed in documents filed by the Company on EDGAR, are legal, valid and binding obligations of the Company enforceable in accordance with their respective terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification provisions of certain agreements may be limited by federal or state securities laws or public policy considerations in respect thereof, except for any unenforceability that, individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect.

(q) No Litigation. There are no legal, governmental or regulatory actions, suits or proceedings pending, nor, to the Company's knowledge, any legal, governmental or regulatory investigations, to which the Company or a Subsidiary is a party or to which any property of the Company or any of its Subsidiaries is the subject that, individually or in the aggregate, if determined adversely to the Company or any of its Subsidiaries, would reasonably be expected to have a Material Adverse Effect or materially and adversely affect the ability of the Company to perform its obligations under this Agreement; to the Company's knowledge, no such actions, suits or proceedings are threatened or contemplated by any governmental or regulatory authority or threatened by others that, individually or in the aggregate, if determined adversely to the Company or any of its Subsidiaries, would reasonably be expected to have a Material Adverse Effect; and (i) there are no current or pending legal, governmental or regulatory actions, suits or proceedings or, to the Company's knowledge, investigations that are required under the Securities Act to be described in the Prospectus that are not described in the Prospectus including any Incorporated Document; and (ii) there are no contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement that are not so filed.

(r) Licenses and Permits. The Company and each of its Subsidiaries possess or have obtained, all licenses, certificates, consents, orders, approvals, permits and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of their respective properties or the conduct of their respective businesses as described in the Registration Statement and the Prospectus (the "Permits"), except where the failure to possess, obtain or make the same would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Neither the Company nor any of its Subsidiaries have received written notice of any proceeding relating to revocation or modification of any such Permit or has any reason to believe that such Permit will not be renewed in the ordinary course, except where the failure to obtain any such renewal would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(s) Market Capitalization. As of the close of trading on the Exchange on the Trading Day immediately prior to the date of this Agreement, the aggregate market value of the outstanding voting and non-voting common equity (as defined in Securities Act Rule 405) of the Company held by persons other than affiliates (as defined in Securities Act Rule 405) was $75 million or more (calculated in accordance with Instruction 1.B.1 of Form S-3). The Company is not a shell company (as defined in Rule 405 under the Securities Act) and has not been a shell company for at least 12 calendar months previously and if it has been a shell company at any time previously, has filed current Form 10 information (as defined in Instruction I.B.6 of Form S-3) with the Commission at least 12 calendar months previously reflecting its status as an entity that is not a shell company. To enable BP to rely on Rule 5110(b)(7)(C)(i) of FINRA, the Company represents that, as of the date of this Agreement, the Company (i) has a non-affiliate, public common equity float of at least $150 million or a non-affiliate, public common equity float of at least $100 million and annual trading volume of at least three million shares and (ii) has been subject to the Exchange Act reporting requirements for a period of at least 36 months.

(t) No Material Defaults. Neither the Company nor any of the Subsidiaries has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect. The Company has not filed a report pursuant to Section 13(a) or 15(d) of the Exchange Act since the filing of its last Annual Report on Form 10-K, indicating that it (i) has failed to pay any dividend or sinking fund installment on preferred stock or (ii) has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect.

(u) Certain Market Activities. Neither the Company, nor any of the Subsidiaries, nor, to the Company's knowledge, any of their respective directors, officers or controlling persons has taken, directly or indirectly, any action designed, or that has constituted or might reasonably be expected to cause or result in, under the Exchange Act or otherwise, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Placement Shares.

(v) Broker/Dealer Relationships. Neither the Company nor any of the Subsidiaries or any related entities (i) is required to register as a "broker" or "dealer" in accordance with the provisions of the Exchange Act or (ii) directly or indirectly through one or more intermediaries, controls or is a "person associated with a member" or "associated person of a member" (within the meaning set forth in the FINRA Manual).

(w) No Reliance. The Company has not relied upon BP or legal counsel for BP for any legal, tax or accounting advice in connection with the offering and sale of the Placement Shares.

(x) Taxes. The Company and each of its Subsidiaries have filed all federal, state, local and foreign tax returns which have been required to be filed and paid all taxes shown thereon through the date hereof, to the extent that such taxes have become due and are not being contested in good faith, except where the failure to do so would not reasonably be expected to have a Material Adverse Effect. Except as otherwise disclosed in or contemplated by the Registration Statement or the Prospectus, no tax deficiency has been determined adversely to the Company or any of its Subsidiaries which has had, or would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect. The Company has no knowledge of any federal, state or other governmental tax deficiency, penalty or assessment which has been asserted or threatened against it which would have a Material Adverse Effect.

(y) Title to Real and Personal Property. The Company and its Subsidiaries have good and marketable title in fee simple to all items of real property and good and valid title to all personal property (excluding Intellectual Property) described in the Registration Statement or Prospectus as being owned by them that are material to the businesses of the Company or such Subsidiary, in each case free and clear of all liens, encumbrances and claims, except those that (i) do not materially interfere with the use made of such property by the Company and any of its Subsidiaries or (ii) would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. Any real property described in the Registration Statement or Prospectus as being leased by the Company and any of its Subsidiaries is held by them under valid, existing and enforceable leases, except those that (A) do not materially interfere with the use made or proposed to be made of such property by the Company or any of its Subsidiaries or (B) would not be reasonably expected, individually or in the aggregate, to have a Material Adverse Effect.

(z) Intellectual Property. To its knowledge, the Company and its Subsidiaries own or possess adequate rights to use all patents, patent applications, trademarks (both registered and unregistered), service marks, trade names, trademark registrations, service mark registrations, copyrights, licenses and know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures) (collectively, the "Intellectual Property"), necessary for the conduct of their respective businesses as conducted as of the date hereof, except to the extent that the failure to own or possess adequate rights to use such Intellectual Property would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; except as disclosed in writing to BP, the Company and any of its

Subsidiaries have not received any written notice of any claim of infringement or conflict which asserted Intellectual Property rights of others, which infringement or conflict, if the subject of an unfavorable decision, would result in a Material Adverse Effect; there are no pending, or to the Company's knowledge, threatened judicial proceedings or interference proceedings against the Company or its Subsidiaries challenging the Company's or its Subsidiaries' rights in or to or the validity of the scope of any of the Company's or its Subsidiaries' owned material patents, patent applications or proprietary information; no other entity or individual has any right or claim in any of the Company's or its Subsidiaries' owned material patents, patent applications or any patent to be issued therefrom by virtue of any contract, license or other agreement entered into between such entity or individual and the Company or a Subsidiary or by any non-contractual obligation of the Company or a Subsidiary, other than by written licenses granted by the Company or a Subsidiary and other than such rights or claims that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; the Company and its Subsidiaries have not received any written notice of any claim challenging the rights of the Company or a Subsidiary in or to any Intellectual Property owned, licensed or optioned by the Company or such Subsidiary which claim, if the subject of an unfavorable decision, would result in a Material Adverse Effect.

(aa) Environmental Laws. The Company and its Subsidiaries (i) are in compliance with any and all applicable federal, state, local and foreign laws, rules, regulations, decisions and orders relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "Environmental Laws"); (ii) have received and are in compliance with all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses as described in the Registration Statement and the Prospectus; and (iii) have not received notice of any actual or potential liability for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, except, in the case of any of clauses (i), (ii) or (iii) above, for any such failure to comply or failure to receive required permits, licenses, other approvals or liability as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(bb) Disclosure Controls. The Company and each of its Subsidiaries maintain systems of internal accounting controls designed to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company is not aware of any material weaknesses in its internal control over financial reporting (other than as set forth in the Prospectus). Since the date of the latest audited financial statements of the Company included in the Prospectus, there has been no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting (other than as set forth in the Prospectus). The Company has established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15 and 15d-15) for the Company and designed such

disclosure controls and procedures to ensure that material information relating to the Company and each of its Subsidiaries is made known to the certifying officers by others within those entities, particularly during the period in which the Company's Annual Report on Form 10-K or Quarterly Report on Form 10-Q, as the case may be, is being prepared. The Company's certifying officers have evaluated the effectiveness of the Company's controls and procedures as of a date within 90 days prior to the filing date of the Form 10-K for the fiscal year most recently ended (such date, the " Evaluation Date"). The Company presented in its Form 10-K for the fiscal year most recently ended the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there have been no significant changes in the Company's internal controls (as such term is defined in Item 307(b) of Regulation S-K under the Securities Act) or, to the Company's knowledge, in other factors that could significantly adversely affect the Company's internal controls. To the knowledge of the Company, the Company's "internal controls over financial reporting" and "disclosure controls and procedures" are effective.

(cc) Sarbanes-Oxley. There is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company's directors or officers, in their capacities as such, to comply with any applicable provisions of the Sarbanes-Oxley Act and the rules and regulations promulgated thereunder. Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company as applicable) has made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other documents required to be filed by it or furnished by it to the Commission. For purposes of the preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Sarbanes-Oxley Act.

(dd) Finder's Fees. Neither the Company nor any of the Subsidiaries has incurred any liability for any finder's fees, brokerage commissions or similar payments in connection with the transactions herein contemplated, except as may otherwise exist with respect to BP pursuant to this Agreement.

(ee) Labor Disputes. No labor disturbance by or dispute with employees of the Company or any of its Subsidiaries exists or, to the knowledge of the Company, is threatened which would reasonably be expected to result in a Material Adverse Effect

(ff) Investment Company Act. Neither the Company nor any of the Subsidiaries is or, after giving effect to the offering and sale of the Placement Shares, will be an "investment company" or an entity "controlled" by an "investment company," as such terms are defined in the Investment Company Act of 1940, as amended (the "Investment Company Act").

(gg) Operations. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial record keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions to which the Company or its Subsidiaries are subject, the rules and regulations thereunder and any related or similar rules,

regulations or guidelines, issued, administered or enforced by any governmental agency having jurisdiction over the Company or its Subsidiaries (collectively, the "Money Laundering Laws"), except as would not reasonably be expected to result in a Material Adverse Effect; and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its Subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(hh) Off-Balance Sheet Arrangements. There are no transactions, arrangements and other relationships between and/or among the Company, and/or, to the knowledge of the Company, any of its affiliates and any unconsolidated entity, including, but not limited to, any structured finance, special purpose or limited purpose entity (each, an "Off Balance Sheet Transaction") that would reasonably be expected to affect materially the Company's liquidity or the availability of or requirements for its capital resources, including those Off Balance Sheet Transactions described in the Commission's Statement about Management's Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), in each case that are required to be described in the Prospectus which have not been described as required.

(ii) Underwriter Agreements. The Company anticipates being a party to the Concurrent Facility Agreement simultaneous with this Agreement, but will not have an open sales order in force with more than one agent or underwriter under such agreements at any given time, provided, however, that nothing in this Agreement shall prohibit the Company from entering into the Concurrent Facility Agreement, a committed equity financing facility or similar transaction.

(jj) ERISA. To the knowledge of the Company, (i) each material employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("ERISA"), that is maintained, administered or contributed to by the Company or any of its affiliates for employees or former employees of the Company and any of its Subsidiaries has been maintained in material compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Internal Revenue Code of 1986, as amended (the " Code"); (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred with respect to any such plan excluding transactions effected pursuant to a statutory or administrative exemption; and (iii) for each such plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, no "accumulated funding deficiency" as defined in Section 412 of the Code has been incurred, whether or not waived, and the fair market value of the assets of each such plan (excluding for these purposes accrued but unpaid contributions) equals or exceeds the present value of all benefits accrued under such plan determined using reasonable actuarial assumptions, other than, in the case of (i), (ii) and (iii) above, as would not reasonably be expected to have a Material Adverse Effect.

(kk) Forward Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) (a "Forward Looking Statement") contained in the Registration Statement and the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith. The

Forward Looking Statements incorporated by reference in the Registration Statement and the Prospectus from the Company's Annual Report on Form 10-K for the fiscal year most recently ended (i) except for any Forward Looking Statement included in any financial statements and notes thereto, are within the coverage of the safe harbor for forward looking statements set forth in Section 27A of the Securities Act, Rule 175(b) under the Securities Act or Rule 3b-6 under the Exchange Act, as applicable, (ii) were made by the Company with a reasonable basis and in good faith and reflect the Company's good faith commercially reasonable best estimate of the matters described therein, and (iii) have been prepared in accordance with Item 10 of Regulation S-K under the Securities Act.

(ll) Margin Rules. Neither the issuance, sale and delivery of the Placement Shares nor the application of the proceeds thereof by the Company as described in the Registration Statement and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors.

(mm) Insurance. The Company and each of its Subsidiaries carry, or are covered by, insurance in such amounts and covering such risks as the Company and each of its Subsidiaries reasonably believe are adequate for the use of their properties and as is customary for companies of similar size engaged in similar businesses in similar industries.

(nn) No Improper Practices. (i) Neither the Company nor, to the Company's knowledge, the Subsidiaries, nor to the Company's knowledge, any of their respective executive officers has, in the past five years, made any unlawful contributions to any candidate for any political office (or failed fully to disclose any contribution in violation of law) or made any contribution or other payment to any official of, or candidate for, any federal, state, municipal, or foreign office or other person charged with similar public or quasi-public duty in violation of any law or of the character required to be disclosed in the Prospectus; (ii) no relationship, direct or indirect, exists between or among the Company or, to the Company's knowledge, any Subsidiary or any affiliate of any of them, on the one hand, and the directors, officers and stockholders of the Company or, to the Company's knowledge, any Subsidiary, on the other hand, that is required by the Securities Act to be described in the Registration Statement and the Prospectus that is not so described; (iii) no relationship, direct or indirect, exists between or among the Company or any Subsidiary or any affiliate of them, on the one hand, and the directors, officers, stockholders or directors of the Company or, to the Company's knowledge, any Subsidiary, on the other hand, that is required by the rules of FINRA to be described in the Registration Statement and the Prospectus that is not so described; (iv) except as described in the Prospectus, there are no material outstanding loans or advances or material guarantees of indebtedness by the Company or, to the Company's knowledge, any Subsidiary to or for the benefit of any of their respective officers or directors or any of the members of the families of any of them; (v) the Company has not offered, or caused any placement agent to offer, Common Stock to any person with the intent to influence unlawfully (A) a customer or supplier of the Company or any Subsidiary to alter the customer's or supplier's level or type of business with the Company or any Subsidiary or (B) a trade journalist or publication to write or publish favorable information about the Company or any Subsidiary or any of their respective products or services; and (vi) neither the Company nor any Subsidiary nor, to the Company's knowledge, any employee or agent of the Company or any Subsidiary has made any payment of funds of the Company or any

Subsidiary or received or retained any funds in violation of any law, rule or regulation (including, without limitation, the Foreign Corrupt Practices Act of 1977), which payment, receipt or retention of funds is of a character required to be disclosed in the Registration Statement or the Prospectus.

(oo) Status Under the Securities Act. The Company was not and is not an ineligible issuer as defined in Rule 405 under the Securities Act at the times specified in Rules 164 and 433 under the Securities Act in connection with the offering of the Placement Shares.

(pp) No Misstatement or Omission in an Issuer Free Writing Prospectus. Each Issuer Free Writing Prospectus, as of its issue date and as of each Applicable Time (as defined in Section 24 below), did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any incorporated document deemed to be a part thereof that has not been superseded or modified. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Company by BP specifically for use therein.

(qq) No Conflicts. Neither the execution of this Agreement by the Company, nor the issuance, offering or sale of the Placement Shares, nor the consummation by the Company of any of the transactions contemplated herein and therein, nor the compliance by the Company with the terms and provisions hereof and thereof will conflict with, or will result in a breach of, any of the terms and provisions of, or has constituted or will constitute a default under, or has resulted in or will result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to the terms of any contract or other agreement to which the Company may be bound or to which any of the property or assets of the Company is subject, except (i) such conflicts, breaches or defaults as may have been waived and (ii) such conflicts, breaches, defaults, liens, charges or encumbrances that would not reasonably be expected to have a Material Adverse Effect; nor will such action result (x) in any violation of the provisions of the certificate of incorporation or bylaws of the Company, or (y) in any material violation of the provisions of any statute or any order, rule or regulation applicable to the Company or of any court or of any federal, state or other regulatory authority or other government body having jurisdiction over the Company, except where such violation would not reasonably be expected to have a Material Adverse Effect.

(rr) Clinical Studies. The clinical, pre-clinical and other studies and tests conducted by or, to the knowledge of the Company, on behalf of the Company were, and, if still pending, are being, conducted in accordance in all material respects with all applicable statutes, laws, rules and regulations (including, without limitation, those administered by the United States Food and Drug Administration (the " FDA") or by any foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA), except where the failure do so would not have a Material Adverse Effect. The Company has not received any written notices or other written correspondence from the FDA or any other foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA requiring the Company to terminate or suspend any ongoing clinical or pre-clinical studies or tests.

(ss) Compliance Program. The Company has established and administers a compliance program applicable to the Company, to assist the Company and the directors, officers and employees of the Company in complying with applicable regulatory guidelines (including, without limitation, those administered by the FDA and any other foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA); except where such noncompliance would not reasonably be expected to have a Material Adverse Effect.

(tt) OFAC. (i) Neither the Company nor any of its Subsidiaries (collectively, the "Entity") or, to the Company's knowledge, any director, officer, employee, agent, affiliate or representative of the Entity, is a government, individual, or entity (in this paragraph (tt), " Person") that is, or is owned or controlled by a Person that is:

(A) the subject of any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control ("OFAC"), the United Nations Security Council ("UNSC"), the European Union ("EU"), Her Majesty's Treasury ("HMT"), or other relevant sanctions authority (collectively, "Sanctions"), nor

(B) located, organized or resident in a country or territory that is the subject of Sanctions (including, without limitation, Burma/Myanmar, Cuba, Iran, North Korea, Sudan and Syria).

(ii) The Company represents and covenants that the Entity will not, directly or indirectly, knowingly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Person:

(A) to fund or facilitate any activities or business of or with any Person or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions; or

(B) in any other manner that will result in a violation of Sanctions by any Person (including any Person participating in the offering, whether as underwriter, advisor, investor or otherwise).

(iii) The Company represents and covenants that, except as detailed in the Prospectus, for the past five years, the Entity has not knowingly engaged in, is not now knowingly engaged in, and will not knowingly engage in, any dealings or transactions with any Person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

(uu) Stock Transfer Taxes. On each Settlement Date, all stock transfer or other taxes (other than income taxes) which are required to be paid in connection with the sale and transfer of the Placement Shares to be sold hereunder will be, or will have been, fully paid or provided for by the Company and all laws imposing such taxes will be or will have been fully complied with in all material respects.

Any certificate signed by an officer of the Company and delivered to BP or to counsel for BP pursuant to or in connection with this Agreement shall be deemed to be a representation and warranty by the Company, as applicable, to BP as to the matters set forth therein.

7. Covenants of the Company. The Company covenants and agrees with BP that:

(a) Registration Statement Amendments. After the date of this Agreement and during any period in which a Prospectus relating to any Placement Shares is required to be delivered by BP under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act) (the "Prospectus Delivery Period"), (i) the Company will notify BP promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus (other than documents incorporated by reference therein) has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus or for additional information, (ii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus (except for documents incorporated by reference therein) unless a copy thereof has been submitted to BP at least two Business Days before the filing and BP has not reasonably and in good faith objected thereto within two Business Days of receiving such copy (provided, however, that (A) the failure of BP to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect BP's right to rely on the representations and warranties made by the Company in this Agreement, (B) the Company has no obligation to provide BP any advance copy of such filing or to provide BP an opportunity to object to such filing if such filing does not name BP or does not relate to the transactions contemplated by this Agreement, and (C) the only remedy BP shall have with respect to the failure by the Company to provide BP with such copy or the filing of such amendment or supplement despite BP's objection shall be to cease making sales under this Agreement) and the Company will furnish to BP at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; and (iii) the Company will cause each amendment or supplement to the Prospectus to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act or, in the case of any document to be incorporated therein by reference, to be filed with the Commission as required pursuant to the Exchange Act, within the time period prescribed (the determination to file or not file any amendment or supplement with the Commission under this Section 7(a), based on the Company's reasonable opinion or reasonable objections, shall be made exclusively by the Company).

(b) Notice of Commission Stop Orders. The Company will advise BP, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose; and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or

to obtain its withdrawal if such a stop order should be issued. The Company will advise BP promptly after it receives any request by the Commission for any amendments to the Registration Statement or any amendment or supplements to the Prospectus or any Issuer Free Writing Prospectus or for additional information related to the offering of the Placement Shares or for additional information related to the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus.

(c) Delivery of Prospectus; Subsequent Changes. During the Prospectus Delivery Period, the Company will use commercially reasonable efforts to comply in all material respects with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If the Company has omitted any information from the Registration Statement pursuant to Rule 430A under the Securities Act, it will use its best efforts to comply with the provisions of and make all requisite filings with the Commission pursuant to said Rule 430A and to notify BP promptly of all such filings. If during the Prospectus Delivery Period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify BP to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; provided, however, that the Company may delay any such amendment or supplement if, in the judgment of the Company, it is in the best interests of the Company to do so.

(d) Listing of Placement Shares. During the Prospectus Delivery Period, the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on the Exchange and to qualify the Placement Shares for sale under the securities laws of such jurisdictions as BP reasonably designates and to continue such qualifications in effect so long as required for the distribution of the Placement Shares; provided, however, that the Company shall not be required in connection therewith to qualify as a foreign corporation or dealer in securities or file a general consent to service of process in any jurisdiction.

(e) Delivery of Registration Statement and Prospectus. The Company will furnish to BP and its counsel (at the expense of the Company) copies of the Registration Statement, the Prospectus (including all documents incorporated by reference therein) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during the Prospectus Delivery Period (including all documents filed with the Commission during such period that are deemed to be incorporated by reference therein), in each case as soon as reasonably practicable and in such quantities as BP may from time to time reasonably request and, at BP's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; provided, however, that the Company shall not be required to furnish any document (other than the Prospectus) to BP to the extent such document is available on EDGAR.

(f) Earnings Statement. The Company will make generally available to its security holders as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement covering a 12-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

(g) Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled " Use of Proceeds."

(h) Notice of Other Sales. Without the prior written consent of BP, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the second (2nd) Trading Day immediately prior to the date on which any Placement Notice is delivered to BP hereunder and ending on the second (2nd) Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, the date of such suspension or termination); and, at any time during which a Placement Notice is pending and for two (2) Trading Days after the last sale of Placement Shares under such Placement Notice, will not directly or indirectly in any other "at the market" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any shares of Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock prior to the termination of this Agreement with respect to Placement Shares sold pursuant to such Placement Notice; provided, however, that such restrictions will not be required in connection with the Company's issuance or sale of (i) Common Stock, options to purchase Common Stock or stock awards or Common Stock issuable upon the exercise of options or vesting of stock awards, pursuant to any employee or director stock option or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented; (ii) Common Stock issuable upon conversion of securities or the exercise of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to BP and (iii) Common Stock, or securities convertible into or exercisable for Common Stock, offered and sold in a privately negotiated transaction to vendors, customers, investors, strategic partners or potential strategic partners and conducted in a manner so as not to be integrated with the offering of Common Stock hereby.

(i) Change of Circumstances. The Company will, at any time during the pendency of a Placement Notice advise BP promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document required to be provided to BP pursuant to this Agreement.

(j) Due Diligence Cooperation. The Company will cooperate with any reasonable due diligence review conducted by BP or its representatives in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices or such other location mutually agreeable by the parties, as BP may reasonably request.

(k) Required Filings Relating to Placement of Placement Shares. The Company agrees that on such dates as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act (the date of each and every such filing under Rule 424(b), a "Filing Date"), which prospectus supplement will set forth, within the relevant period, the amount of Placement Shares sold through BP, the Net Proceeds to the Company and the compensation payable by the Company to BP with respect to such Placement Shares, and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market.

(l) Representation Dates; Certificate. On the date of this Agreement and each time during the term of this Agreement the Company:

(i) files the Prospectus relating to the Placement Shares or amends or supplements (other than a prospectus supplement relating solely to an offering of securities other than the Placement Shares) the Registration Statement or the Prospectus relating to the Placement Shares by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of documents by reference into the Registration Statement or the Prospectus relating to the Placement Shares;

(ii) files an annual report on Form 10-K under the Exchange Act (including any Form 10-K/A containing restated financial statements or a material amendment to the previously filed Form 10-K);

(iii) files its quarterly reports on Form 10-Q under the Exchange Act; or

(iv) files a current report on Form 8-K containing amended audited financial information (other than information "furnished" pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) under the Exchange Act;

(Each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a " Representation Date")

the Company shall furnish BP (but in the case of clause (iv) above only if BP reasonably determines that the information contained in such Form 8-K is material) with a certificate, in the form attached hereto as Exhibit 7(l). The requirement to provide a certificate under this Section 7(l) shall be automatically waived for any Representation Date occurring at a time at which no Placement Notice is pending, which waiver shall continue until the date the Company delivers a

Placement Notice hereunder (which for such calendar quarter shall be considered a Representation Date); provided, however, that such waiver shall not apply for any Representation Date on which the Company files its annual report on Form 10-K. Notwithstanding the foregoing, if the Company subsequently decides to sell Placement Shares following a Representation Date when the Company relied on such waiver and did not provide BP with a certificate under this Section 7(l), then before the Company delivers the Placement Notice or BP sells any Placement Shares, the Company shall provide BP with a certificate, in the form attached hereto as Exhibit 7(l), dated the date of the Placement Notice.

(m) Legal Opinion. On or prior to the date of the first Placement Notice given hereunder, the Company shall cause to be furnished to BP a written opinion and letter of Cooley LLP, or such other counsel reasonably satisfactory to BP ("Company Counsel"), covering opinions and statements substantially in the forms attached hereto as Exhibits 7(m)(1) and 7(m)(2). Thereafter within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(l) for which no waiver is applicable, the Company shall cause to be furnished to BP a letter of Company Counsel covering statements substantially in the form attached hereto as Exhibits 7(m)(2), modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented; provided, however, the Company shall be required to furnish to BP no more than one letter hereunder per calendar quarter and the Company shall not be required to furnish such letter if the Company does not intend to deliver a Placement Notice in such calendar quarter until such time as the Company delivers its next Placement Notice; provided, further, that in lieu of such letters for subsequent periodic filings under the Exchange Act, counsel may furnish BP with a letter (a " Reliance Letter") to the effect that BP may rely on a prior letter delivered under this Section 7(m) to the same extent as if it were dated the date of such letter (except that statements in such prior letter shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as of the date of the Reliance Letter). Notwithstanding anything to the contrary set forth herein, each obligation of the Company to cause to be furnished to BP a letter of Company Counsel substantially in the form attached hereto as Exhibit 7(m)(2) shall be conditioned upon the concurrent delivery to BP of a letter of LeClairRyan, or other counsel to BP reasonably acceptable to BP (" BP Counsel"), covering statements substantially similar to those covered by such letter of Company Counsel

(n) Comfort Letter. On or prior to the date the first Placement Notice is given hereunder and thereafter within five (5) Trading Days after each Representation Date referred to in Section 7(l)(ii), the Company shall cause its independent accountants to furnish BP letters (the " Comfort Letters"), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(n); provided, that if requested by BP, the Company shall cause a Comfort Letter to be furnished to BP prior to the tenth (10th) Trading Day after the date of occurrence of any material transaction or event (including the restatement of the Company's financial statements) requiring the filing of a current report on Form 8-K containing material financial information and the date the first Placement Notice is given hereunder following such a material transaction or event, whichever is later. The Comfort Letter from the Company's independent accountants shall be in a form and substance reasonably satisfactory to BP, (i) confirming that they are an independent public accounting firm within the meaning of the

Securities Act and the PCAOB, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants' "comfort letters" to underwriters in connection with registered public offerings (the first such letter, the " Initial Comfort Letter") and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

(o) Market Activities. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or might reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of Common Stock or (ii) sell, bid for, or purchase Common Stock in violation of Regulation M, or pay anyone any compensation for soliciting purchases of the Placement Shares other than BP.

(p) Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that neither it nor any of its Subsidiaries will be or become, at any time prior to the termination of this Agreement, an "investment company," as such term is defined in the Investment Company Act.

(q) Sarbanes-Oxley Act. The Company and the Subsidiaries will maintain and keep accurate books and records reflecting their assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company's consolidated financial statements in accordance with generally accepted accounting principles, (iii) that receipts and expenditures of the Company are being made only in accordance with management's and the Company's directors' authorization, and (iv) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on its financial statements. The Company and the Subsidiaries will maintain such controls and other procedures, including, without limitation, those required by Sections 302 and 906 of the Sarbanes-Oxley Act, and the applicable regulations thereunder that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms, including, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure and to ensure that material information relating to the Company or the Subsidiaries is made known to them by others within those entities, particularly during the period in which such periodic reports are being prepared.

8. Representations and Covenants of BP. BP represents and warrants that it is duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which BP is exempt from registration or such registration is not otherwise required. BP shall continue, for the term of this Agreement, to be duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which BP is exempt from registration or such registration is not otherwise required, during the term of this Agreement. BP will comply with all applicable laws and regulations (including, without limitation, Regulation M) in connection with performing its obligations under this Agreement.

9. Payment of Expenses.

(a) The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation, filing, including any fees required by the Commission, and printing of the Registration Statement (including financial statements and exhibits) as originally filed and of each amendment and supplement thereto and each Issuer Free Writing Prospectus, in such number as BP shall reasonably deem necessary, (ii) the printing and delivery to BP of this Agreement and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (iii) the preparation, issuance and delivery of the certificates, if any, for the Placement Shares to BP, including any stock or other transfer taxes and any capital duties, stamp duties or other duties or taxes payable upon the sale, issuance or delivery of the Placement Shares to BP, (iv) the fees and disbursements of the counsel, accountants and other advisors to the Company, (v) the reasonable fees and disbursements of counsel to BP, up to a maximum amount of $25,000, (vi) the fees and expenses of the transfer agent and registrar for the Common Stock, (vii) the filing fees incident to any review by FINRA of the terms of the sale of the Placement Shares, and (viii) the fees and expenses incurred in connection with the listing of the Placement Shares on the Exchange.

(b) If this Agreement is terminated by BP in accordance with the provisions of Section 13(a) hereof as a result of a material breach by the Company of its obligations hereunder, the Company shall reimburse BP for all of its reasonable out-of-pocket expenses, including reasonable fees and disbursements of counsel for BP (less any amounts paid under clause (a)(v) above) up to a maximum of $25,000.

10. Conditions to BP's Obligations. The obligations of BP hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein, to the due performance by the Company of its obligations hereunder, to the completion by BP of a due diligence review satisfactory to it in its reasonable judgment, and to the continuing satisfaction (or waiver by BP in its sole discretion) of the following additional conditions:

(a) Registration Statement Effective. The Registration Statement shall have become effective and shall be available for the sale of all Placement Shares contemplated to be issued by any Placement Notice.

(b) No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state governmental authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus; (ii) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; or (iv) any event that makes any material statement made in the Registration Statement or the Prospectus or any material document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, the Prospectus or documents so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(c) No Misstatement or Material Omission. BP shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in BP's reasonable opinion is material, or omits to state a fact that in BP's opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

(d) Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any material adverse change, on a consolidated basis, in the authorized capital stock of the Company or any Material Adverse Effect, or any development in the business or affairs of the Company that could reasonably be expected to cause a Material Adverse Effect.

(e) Legal Opinion. BP shall have received the opinions of Company Counsel and BP Counsel required to be delivered pursuant Section 7(m) on or before the date on which such delivery of such opinions are required pursuant to Section 7(m).

(f) Comfort Letter. BP shall have received the Comfort Letter required to be delivered pursuant Section 7(n) on or before the date on which such delivery of such letter is required pursuant to Section 7(n).

(g) Representation Certificate. BP shall have received the certificate required to be delivered pursuant to Section 7(l) on or before the date on which delivery of such certificate is required pursuant to Section 7(l).

(h) No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange and the Common Stock shall not have been delisted from the Exchange.

(i) Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(l), the Company shall have furnished to BP such appropriate further information, certificates and documents as BP may have reasonably requested in writing prior to such date and which are usually and customarily furnished by an issuer of securities in connection with the underwritten public offering thereof. All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof. The Company will furnish BP with such conformed copies of such opinions, certificates, letters and other documents as BP shall reasonably request.

(j) Securities Act Filings Made. All filings with the Commission required by Rule 424 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424.

(k) Approval for Listing. The Placement Shares shall either have been approved for listing on the Exchange, subject only to notice of issuance, or the Company shall have filed an application for listing of the Placement Shares on the Exchange at, or prior to, the issuance of any Placement Notice.

(l) No Termination Event. There shall not have occurred any event that would permit BP to terminate this Agreement pursuant to Section 13(a).

11. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless BP, its partners, members, directors, officers, employees and agents and each person, if any, who controls BP within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any untrue statement or alleged untrue statement of a material fact included in the any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; provided that (subject to Section 11(d) below) any such settlement is effected with the written consent of the Company, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as incurred (including the reasonable fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, to the extent that any such expense is not paid under (i) or (ii) above, provided, however , that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission or alleged untrue statement or omission made solely in reliance upon and in conformity with written information furnished to the Company by BP expressly for use in the Registration Statement (or any amendment thereto) or in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto).

(b) BP Indemnification. BP agrees to indemnify and hold harmless the Company and its directors and each officer of the Company who signed the Registration Statement, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 11(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendments thereto) or any Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with information furnished to the Company in writing by BP expressly for use therein.

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 11 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 11, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 11 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 11 unless, and only to the extent that, such omission results in the forfeiture or material impairment of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the

defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly after the indemnifying party receives a written invoice relating to fees, disbursements and other charges in reasonable detail. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 11 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party from all liability arising out of such litigation, investigation, proceeding or claim and (2) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

(d) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 11 is applicable in accordance with its terms but for any reason is held to be unavailable from the Company or BP, the Company and BP will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than BP, such as persons who control the Company within the meaning of the Securities Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution) to which the Company and BP may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and BP on the other hand. The relative benefits received by the Company on the one hand and BP on the other hand shall be deemed to be in the same

proportion as the total net proceeds from the sale of the Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by BP (before deducting expenses) from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and BP, on the other hand, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or BP, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and BP agree that it would not be just and equitable if contributions pursuant to this Section 11(d) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 11(d) shall be deemed to include, for the purpose of this Section 11(d), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 11(c) hereof. Notwithstanding the foregoing provisions of this Section 11(d), BP shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 11(d), any person who controls a party to this Agreement within the meaning of the Securities Act, and any officers, directors, partners, employees or agents of BP, will have the same rights to contribution as that party, and each officer and director of the Company who signed the Registration Statement will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 11(d), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 11(d) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 11(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 11(c) hereof.

12. Representations and Agreements to Survive Delivery . The indemnity and contribution agreements contained in Section 11 of this Agreement and all representations and warranties of the Company and BP herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of BP, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

13. Termination.

(a) BP may terminate this Agreement, by notice to the Company, as hereinafter specified at any time (1) if there has been, since the time of execution of this Agreement or since the date as of which information is given in the Prospectus, any Material Adverse Effect, or any development that has occurred that is reasonably likely to have a Material Adverse Effect has occurred or in the sole judgment of BP makes it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (2) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the sole judgment of BP, impracticable or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (3) if trading in the Common Stock has been suspended or limited by the Commission or the Exchange, or if trading generally on the Exchange has been suspended or limited, or minimum prices for trading have been fixed on the Exchange, (4) if any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be continuing for at least ten (10) Trading Days, (5) if a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing, or (6) if a banking moratorium has been declared by either U.S. Federal or New York authorities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination. If BP elects to terminate this Agreement as provided in this Section 13(a), BP shall provide the required notice as specified in Section 14 (Notices).

(b) The Company shall have the right, by giving ten (10) days notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(c) BP shall have the right, by giving ten (10) days notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(d) Unless earlier terminated pursuant to this Section 13, this Agreement shall automatically terminate upon the earlier to occur of (i) the third (3 rd) year anniversary of the date hereof and (ii) the issuance and sale of all of the Placement Shares through BP on the terms and subject to the conditions set forth herein except that the provisions of Section 9, Section 11, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(e) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 13(a), (b), (c), or (d) above or otherwise by mutual agreement of the parties; provided, however, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 9, Section 11, Section 12, Section 18 and Section 19 shall remain in full force and effect. Upon termination of this Agreement, the Company shall not have any liability to BP for any discount, commission or other compensation with respect to any Placement Shares not otherwise sold by BP under this Agreement.

(f) Any termination of this Agreement shall be effective on the date specified in such notice of termination; provided, however, that such termination shall not be effective until the close of business on the date of receipt of such notice by BP or the Company, as the case may be. If such termination shall occur prior to the Settlement Date for any sale of Placement Shares, such Placement Shares shall settle in accordance with the provisions of this Agreement.

14. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified, and if sent to BP, shall be delivered to:

Meyers Associates, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P.)
3 Columbus Circle, 15th Floor
New York, NY 10019
Attention: Corporate Finance
Telephone: (212) 453-5000
Facsimile: (212) 453-5555

with a copy to:

LeClairRyan, A Professional Corporation
One Riverfront Plaza
1037 Raymond Boulevard, 16th Floor
Newark, NJ 07102
Attention: James T. Seery
Telephone: (973) 491-3315
Facsimile: (973) 491-3415

and if to the Company, shall be delivered to:

MannKind Corporation
28903 North Avenue Paine
Valencia, CA 91355
Attention: General Counsel
Telephone (661) 775-5350
Facsimile: (661) 775-2086

with a copy to:

Cooley LLP
4401 Eastgate Mall
San Diego, CA 92121
Attention: L. Kay Chandler
Sean M. Clayton
Telephone: (858) 550-6000
Facsimile: (858) 550-6420

Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally or by verifiable facsimile transmission (with an original to follow) on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) on the next Business Day after timely delivery to a nationally-recognized overnight courier and (iii) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, " Business Day" shall mean any day on which the Exchange and commercial banks in the City of New York are open for business.

An electronic communication ("Electronic Notice") shall be deemed written notice for purposes of this Section 14 if sent to the electronic mail address specified by the receiving party under separate cover. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives confirmation of receipt by the receiving party. Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("Nonelectronic Notice") which shall be sent to the requesting party within ten (10) days of receipt of the written request for Nonelectronic Notice.

15. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and BP and their respective successors and the affiliates, controlling persons, officers and directors referred to in Section 11 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party.

16. Adjustments for Stock Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any share consolidation, stock split, stock dividend, corporate domestication or similar event effected with respect to the Placement Shares.

17. Entire Agreement; Amendment; Severability . This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto) constitutes the entire agreement of the parties with respect to the subject matter hereof and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and BP. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement.

18. GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL. THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. THE COMPANY HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

19. CONSENT TO JURISDICTION. EACH PARTY HEREBY IRREVOCABLY SUBMITS TO THE NON-EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH ANY TRANSACTION CONTEMPLATED HEREBY, AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT, THAT SUCH SUIT, ACTION OR PROCEEDING IS BROUGHT IN AN INCONVENIENT FORUM OR THAT THE VENUE OF SUCH SUIT, ACTION OR PROCEEDING IS IMPROPER. EACH PARTY HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF (CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED) TO SUCH PARTY AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THIS AGREEMENT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW.

20. Use of Information. BP may not use any information gained in connection with this Agreement and the transactions contemplated by this Agreement, including due diligence, to advise any party with respect to transactions not expressly approved by the Company.

21. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by facsimile transmission.

22. Effect of Headings. The section and Exhibit headings herein are for convenience only and shall not affect the construction hereof.

23. Permitted Free Writing Prospectuses. The Company represents, warrants and agrees that, unless it obtains the prior consent of BP (such consent not to be unreasonably withheld, conditioned or delayed), and BP represents, warrants and agrees that, unless it obtains the prior consent of the Company (such consent not to be unreasonably withheld, conditioned or delayed), it has not made and will not make any offer relating to the Placement Shares that would constitute an Issuer Free Writing Prospectus, or that would otherwise constitute a "free writing prospectus," as defined in Rule 405, required to be filed with the Commission. Any such free writing prospectus consented to by BP or by the Company, as the case may be, is hereinafter referred to as a " Permitted Free Writing Prospectus." The Company represents and warrants that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an "issuer free writing prospectus," as defined in Rule 433, and has complied and will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping. For the purposes of clarity, the parties hereto agree that all free writing prospectuses, if any, listed in Exhibit 23 hereto are Permitted Free Writing Prospectuses.

24. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

(a) BP is acting solely as agent in connection with the public offering of the Placement Shares and in connection with each transaction contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and BP, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether or not BP has advised or is advising the Company on other matters, and BP has no obligation to the Company with respect to the transactions contemplated by this Agreement except the obligations expressly set forth in this Agreement;

(b) it is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) BP has not provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement and it has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

(d) it is aware that BP and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and BP has no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

(e) it waives, to the fullest extent permitted by law, any claims it may have against BP for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the sale of Placement Shares under this Agreement and agrees that BP shall not have any liability (whether direct or indirect, in contract, tort or otherwise) to it in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on its behalf or in right of it or the Company, employees or creditors of Company, other than in respect of BP's obligations under this Agreement and to keep information provided by the Company to BP and BP's counsel confidential to the extent not otherwise publicly-available.

25. Definitions. As used in this Agreement, the following terms have the respective meanings set forth below:

"Applicable Time" means (i) each Representation Date and (ii) the time of each sale of any Placement Shares pursuant to this Agreement.

"Issuer Free Writing Prospectus" means any "issuer free writing prospectus," as defined in Rule 433, relating to the Placement Shares that (1) is required to be filed with the Commission by the Company, (2) is a "road show" that is a "written communication" within the meaning of Rule 433(d)(8)(i) whether or not required to be filed with the Commission, or (3) is exempt from filing pursuant to Rule 433(d)(5)(i) because it contains a description of the Placement Shares or of the offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company's records pursuant to Rule 433(g) under the Securities Act Regulations.

"Rule 164," "Rule 172," "Rule 405," "Rule 415," "Rule 424," "Rule 424(b)," "Rule 430B," and "Rule 433" refer to such rules under the Securities Act Regulations.

All references in this Agreement to financial statements and schedules and other information that is "contained," "included" or "stated" in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information that is incorporated by reference in the Registration Statement or the Prospectus, as the case may be.

All references in this Agreement to the Registration Statement, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to EDGAR; all references in this Agreement to any Issuer Free Writing Prospectus (other than any Issuer Free Writing Prospectuses that, pursuant to Rule 433, are not required to be filed with the Commission) shall be deemed to include the copy thereof filed with the Commission pursuant to EDGAR; and all references in this Agreement to "supplements" to the Prospectus shall include, without limitation, any supplements, "wrappers" or similar materials prepared in connection with any offering, sale or private placement of any Placement Shares by BP outside of the United States.

[Remainder of page intentionally left blank]

If the foregoing correctly sets forth the understanding between the Company and BP, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and BP.

Very truly yours,

MANNKIND CORPORATION

By: /s/ Matthew J. Pfeffer
Name: Matthew J. Pfeffer
Title: Chief Financial Officer

ACCEPTED as of the date first-above written:

MEYERS ASSOCIATES, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P.)

By: /s/ Todd Wyche
Name: Todd Wyche
Title: Chief Executive Officer

SCHEDULE 1

FORM OF PLACEMENT NOTICE

From:	MannKind Corporation
To:	Meyers Associates, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P.)
	Attention: Nino Jimenez
Subject:	At-The-Market Issuance - Placement Notice

Gentlemen:

Pursuant to the terms and subject to the conditions contained in the At-The-Market Issuance Sales Agreement between MannKind Corporation, a Delaware corporation (the "Company"), and Meyers Associates, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P.) (" BP"), dated March 3, 2014, the Company hereby requests that BP sell up to of the Company's Common Stock, par value $0.01 per share, at a minimum market price of $ per share, during the time period beginning [month, day, time] and ending [month, day, time]. [The Company may include such other sales parameters as it deems appropriate.]

SCHEDULE 2

Compensation

The Company shall pay to BP in cash, upon each sale of Placement Shares pursuant to this Agreement, an amount up to 3.0% of the gross proceeds from each sale of Placement Shares.

SCHEDULE 3

Notice Parties

The Company

Matthew Pfeffer	mpfeffer@mannkindcorp.com
David Thomson	dthomson@mannkindcorp.com
Hakan Edstrom	hedstrom@mannkindcorp.com

BP

Nino Jimenez
Todd Wyche

The above-mentioned individuals from BP can be reached at
trading@brinsonpatrick.com and at 212-453-3000

SCHEDULE 4

Subsidiaries

None.

EXHIBIT 7(l)

Form of Representation Date Certificate

This Officers Certificate (this "Certificate") is executed and delivered in connection with Section 7(l) of the At-The-Market Issuance Sales Agreement (the "Agreement"), dated March 3, 2014, and entered into between MannKind Corporation (the " Company") and Meyers Associates, L.P. (doing business as Brinson Patrick, a division of Meyers Associates, L.P.) ("BP"). All capitalized terms used but not defined herein shall have the meanings given to such terms in the Agreement.

The undersigned, a duly appointed and authorized officer of the Company, having made reasonable inquiries to establish the accuracy of the statements below and having been authorized by the Company to execute this certificate on behalf of the Company, hereby certifies, on behalf of the Company and not in the undersigned's individual capacity, as follows:

1. As of the date of this Certificate, (i) the Registration Statement does not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading and (ii) neither the Registration Statement nor the Prospectus contains any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading and (iii) no event has occurred as a result of which it is necessary to amend or supplement the Prospectus in order to make the statements therein not untrue or misleading for (i) and (ii) to be true.

2. Each of the representations and warranties of the Company contained in the Agreement was true and correct in all material respects, when originally made, and, except for those representations and warranties that speak solely as of a specific date, is true and correct as of the date of this Certificate.

3. Except as waived by BP in writing, each of the covenants required to be performed by the Company in the Agreement on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement, has been duly, timely and fully performed in all material respects and each condition required to be complied with by the Company on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement has been duly, timely and fully complied with in all material respects.

4. No stop order suspending the effectiveness of the Registration Statement or of any part thereof has been issued, and, to the Company's knowledge, no proceedings for that purpose have been instituted or are pending or threatened by any securities or other governmental authority (including, without limitation, the Commission).

5. No order suspending the effectiveness of the Registration Statement or the qualification or registration of the Placement Shares under the securities or Blue Sky laws of any jurisdiction are in effect and no proceeding for such purpose is pending before, or threatened, to the Company's knowledge or in writing by, any securities or other governmental authority (including, without limitation, the Commission).

The undersigned has executed this Officer's Certificate on behalf of the Company as of the date first written above.

MANNKIND CORPORATION

By: _____
Name: _____
Title: _____

EXHIBIT 7(m)(1)

Form of Legal Opinion

EXHIBIT 7(m)(2)

Form of Legal Letter

Exhibit 23

Permitted Free Writing Prospectus

None.

Exhibit 10.39

FIRST AMENDMENT TO FACILITY AGREEMENT AND REGISTRATION RIGHTS AGREEMENT

FIRST AMENDMENT TO FACILITY AGREEMENT AND REGISTRATION RIGHTS AGREEMENT (this "Amendment"), dated as of February 28, 2014, by and among MANNKIND CORPORATION, a Delaware corporation (the "Borrower"), DEERFIELD PRIVATE DESIGN FUND II, L.P. ("DPDF") and DEERFIELD PRIVATE DESIGN INTERNATIONAL II, L.P. (together with DPDF collectively referred to as the "Purchasers" and together with the Borrower, the "Parties").

RECITALS:

1. Borrower and Purchasers have entered into that certain Facility Agreement and Registration Rights Agreement, each dated as of July 1, 2013 (as the same may be amended, modified, restated or otherwise supplemented from time to time, the " Facility Agreement" and "Registration Rights Agreement").

2. The Facility Agreement provides for the issuance of Notes in 4 Tranches of $40 million per Tranche. Prior to the date hereof, the Purchasers have purchased the Tranche 1 Notes, the Tranche 2 Notes and the Tranche 3 Notes in the principal amount of $40 million each.

3. Prior to the date hereof, the Purchasers have converted the Tranche 2 Notes into Common Stock, leaving the Tranche 1 Notes and the Tranche 3 Notes outstanding in the aggregate principal amount of $80 million.

4. The Borrower has agreed to deliver to the Purchasers a Note Purchase Request for the Tranche 4 Notes pursuant to the terms and conditions of the Facility Agreement upon satisfaction of the Tranche 4 Conditions.

5. The Parties desire to amend the Tranche 1 Notes and the Tranche 3 Notes to provide that, subject to the limitations set forth in this Amendment, up to an additional $60 million aggregate principal amount of the Tranche 1 Notes and the Tranche 3 Notes can be converted from time to time into Common Stock; provided, that the Tranche 3 Notes must be fully converted prior to the conversion of the Tranche 1 Notes(the aggregate principal amount of the Tranche 1 Notes and Tranche 3 Notes converted after the date of this Amendment into Common Stock on the date of determination, the " Conversion Aggregate Principal Amount"). The Borrower desires to issue to the Purchaser Amended and Restated Tranche 1 Notes and Tranche 3 Notes, in the form of Exhibit A, incorporating the modifications to such Notes as referred to above (the " Amended and Restated Notes").

6. The Parties desire to amend the Facility Agreement to provide that, prior to December 30, 2014, the Borrower may deliver a Note Purchase Request from time to time pursuant to the procedures outlined in Section 2.2 of the Facility Agreement or the Purchasers to purchase a new series of Notes in the form attached hereto as Exhibit B (the "Tranche B Notes")

in a maximum principal amount equal to (a) at any time after the date of this Amendment, 33.33% of the Conversion Aggregate Principal Amount or (b) if the FDA has approved a new drug application for the Product ("FDA Approval") and the Purchasers have purchased the Tranche 4 Notes, 150% of the Conversion Aggregate Principal Amount.

7. The Tranche B Notes will bear interest at the Interest Rate (which shall be reduced to 8.75% simple interest per year upon the Borrower entering into a collaborative arrangement with an unrelated Person to develop and commercialize the Product after FDA Approval) and shall be prepayable at any time commencing two years from their date of issuance without premium or penalty.

8. The Parties desire to permit the additional issuance of unsecured convertible senior subordinated notes.

NOW, THEREFORE, in consideration of the mutual agreements contained herein, the Parties agree as follows:

1. Defined Terms. Capitalized terms used herein which are defined in the Facility Agreement, unless otherwise defined herein, shall have the meanings ascribed to them in the Facility Agreement and the Registration Rights Agreement. The Recitals to this Amendment are incorporated herein in their entirety by this reference thereto.

2. Amendments to Facility Agreement.

Upon the satisfaction of the conditions set forth in Section 5 to this Amendment:

a. The definition of "Notes" in Section 1.1 of the Facility Agreement is amended in its entirety to read as follows:

"Notes" means the Tranche 1 Notes, Tranche 2 Notes, Tranche 3 Notes, the Amended and Restated Notes, Tranche 4 Notes in the form attached as Exhibit B to the Facility Agreement and, unless the context indicates otherwise, the Tranche B Senior Secured Notes in the form attached as Exhibit B to the First Amendment to Facility Agreement and Registration Rights Agreement (the "Tranche B Notes"), in each case, as amended, modified, restated or supplemented from time to time."

b. The definition of Interest Rate in Section 1.1 of the Facility Agreement is amended in its entirety to read as follows:

"Interest Rate" means with respect to the Tranche 1 Notes, Tranche 2 Notes, Tranche 3 Notes, and Tranche 4 Notes 9.75% simple interest per annum, and with respect to the Tranche B Notes, 9.75% simple interest per annum: provided, however that at the effective date of a collaboration of the Borrower with an unrelated Person to develop and commercialize the Product after FDA Approval, the interest rate with respect to the Tranche B Notes shall thereafter be 8.75% simple interest per annum.

c. The defined term "Permitted Indebtedness" in Section 1.1 of the Facility Agreement is amended to (x) renumber subsection "(xxv)" as "(xxvi)" and insert a new subsection (xxv) to read as follows:

"(xxv) Unsecured Indebtedness in respect of unsecured convertible senior subordinated notes in an aggregate principal amount not exceeding $250 million that (b) provides for repayment of the outstanding principal amount only after the last scheduled maturity date of the outstanding Notes are paid in full (other than customary obligations to repurchase the notes upon a "fundamental change" or obligations to settle conversions of the notes) and (b) is subordinated to the Notes pursuant to customary subordination terms found in standard senior subordinated convertible notes offerings; and"

d. The defined term "Transaction Documents" in Section 1.1 of the Facility Agreement is hereby amended to include the Tranche B Notes and the Amended and Restated Notes as additional Transaction Documents.

e. Section 1.1 of the Facility Agreement is amended to add thereto the following additional defined terms:

"Conversion Aggregate Principal Amount" means the aggregate principal amount of the Tranche 1 Notes and the Tranche 3 Notes that have been converted into Common Stock commencing on and after the date of the First Amendment to Facility Agreement and Registration Rights Agreement.

"FDA Approval" has the meaning provided in Section 2.2(e) of this Agreement.

"First Amendment to Facility Agreement" means the First Amendment to Facility Agreement and Registration Rights Agreement dated as of February 28, 2014 between Borrower and Purchasers.

"Tranche B Notes" has the meaning provided in the definition of Notes in Section 1.1 of this Agreement.

f. Section 2.2(b) of the Facility Agreement is hereby amended to add in the first sentence thereof reference to the Tranche B Notes.

g. Section 2.2 of the Facility Agreement is hereby amended to add thereto a new subsection (e) to read as follows:

"Prior to December 30, 2014, the Borrower may deliver one or more Note Purchase Requests from time to time pursuant to the procedures outlined in Section 2.2 for the Purchasers to purchase Tranche B Notes in a maximum principal amount equal to (i) at any time from and after the date of the First Amendment to Facility Agreement, the excess of (x) 33.33% of the Conversion Aggregate Principal Amount on the date of delivery of the Note Purchase

Requests over (y) any amounts for which Tranche B Notes are issued pursuant to Note Purchase Requests delivered under this Section 2.2(e)(i) or (ii) if the FDA has approved a New Drug Application for the Product ("FDA Approval") and the Purchasers have purchased the Tranche 4 Notes, the excess of (x) 150% of the Conversion Aggregate Principal Amount on the date of delivery of the Note Purchase Request over (y) any amounts for which Tranche B Notes are issued pursuant to Note Purchase Requests delivered under this Section 2.2(e)(ii) and Section 2.2(e)(i). Each Note Purchase Request to purchase Tranche B Notes shall be in a minimum amount of $5,000,000, or such lesser amount of the Tranche B Notes available for purchase hereunder. The Tranche B Notes are prepayable commencing two years after their date of issuance without premium or penalty and not otherwise."

h. Section 3.1(s) of the Facility Agreement is hereby amended in its entirety to read as follows:

"Except as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect in each case in clauses (A) through (C), the Borrower: (A) has not received any warning letter or other correspondence or notice from the FDA or from any other Government Authority as of the Agreement Date alleging or asserting noncompliance with Applicable Laws; (B) except for approval from the FDA and other Governmental Authorities to market and sell the Product, possesses all licenses, certificates, approvals, clearances, authorizations, permits and supplements or amendments thereto required by any Applicable Laws (together, the " Authorizations"), which are valid and in full force and effect and has not received any notice from the FDA or any other Government Authority as of the Agreement Date alleging or asserting noncompliance with any Authorizations; and (C) has not received written notice that any Government Authority has taken, is taking, or intends to take action to limit, suspend, modify or revoke any outstanding Authorization and has no knowledge that any Government Authority is considering such action."

3. Amendments to the Registration Rights Agreement . Upon the satisfaction of the conditions set forth in Section 5 of this Amendment:

a. The definition of "Facility Agreement" in the Registration Rights Agreement is hereby deleted in its entirety and the following is inserted in substitution thereof:

"Facility Agreement" means the Facility Agreement between the parties hereto, dated as of July 1, 2013, as amended by the First Amendment to Facility Agreement and Registration Rights Agreement, dated as of February 28, 2014, as amended, modified, restated or supplemented from time to time.

b. The date of delivery of the Amended and Restated Notes as provided in Section 5(a) shall be deemed an "Issuance Date" under the Registration Rights Agreement.

4. Covenants. Borrower covenants and agrees to execute and deliver to Purchasers on the date of this Amendment, amended and restated Notes in the forms of Exhibit A attached hereto ("Amended and Restated Notes"), in substitution for and replacement of the Tranche 1 Notes and Tranche 3 Notes executed by Borrower, which Amended and Restated Notes shall not constitute payment, settlement or novation of the existing Tranche 1 Notes and Tranche 3 Notes. Upon execution of the Amended and Restated Notes, the Tranche 1 Notes and Tranche 3 Notes shall be deemed to be automatically cancelled. Lenders covenant and agree to return the original outstanding Tranche 1 Notes and Tranche 3 Notes to Borrower.

5. Conditions Precedent. The effectiveness of this Amendment is subject to the following conditions precedent:

a. Delivery of Documents to Purchasers. The following shall have been delivered to Purchasers, each duly executed and in form and substance satisfactory to Purchasers in their sole discretion:

i. this Amendment; and

ii. the Amended and Restated Notes.

b. Delivery of Documents to Borrower. The following shall have been delivered to Borrower, each duly executed and in form and substance satisfactory to Borrower in its sole discretion:

i. this Amendment.

c. Performance; No Default. Borrower shall have performed and complied with all agreements and conditions contained in the Facility Agreement and the other Transaction Documents to be performed by or complied with by Borrower prior to the date hereof in all material respects, and, after giving effect to this Amendment, no Event of Default shall exist or be created hereby.

6. Representations and Warranties. Borrower hereby represents and warrants to Purchasers as follows:

a. As of the date hereof, the representations and warranties of Borrower contained in the Transaction Documents are (i) in the case of representations and warranties qualified by "materiality," "Material Adverse Effect" or similar language, true and correct in all respects and (ii) in the case of all other representations and warranties, true and correct in all material respects, in each case on and as of the date hereof, except to the extent that any such representation or warranty relates to a specific date, in which case such representation and warranty shall be true and correct in all respects or all material respects, as applicable, as of such earlier date;

b. The execution, delivery and performance by Borrower of this Amendment and the Amended and Restated Notes (i) are within Borrower's corporate powers, (ii) have been duly authorized by all necessary action pursuant to its Organizational Documents, (iii) require no further action by or in respect of, or filing with, any Government Authority, except for such

registrations and filings in connection with the issuance of the shares of Common Stock pursuant to the Notes and (iv) do not violate, conflict with or cause a breach or a default under any provision of applicable law or regulation or of Borrower's Organizational Documents or of any agreement, judgment, injunction, order, decree or other instrument binding upon Borrower, except to the extent such violation, conflict, breach or default would not individually or in the aggregate reasonably be expected to have a Material Adverse Effect;

c. This Amendment constitutes the valid and binding obligation of Borrower, enforceable against Borrower in accordance with its terms, except as enforceability may be limited by applicable bankruptcy, insolvency, or similar laws relating to the enforcement of creditor's rights generally and by general equitable principles;

d. No Event of Default exists; and

e. The shares of Common Stock issuable upon conversion of the Notes, have been duly authorized and when issued, delivered and paid for in accordance with the terms of the Notes, will have been validly issued and will be fully paid and nonassessable. There are no preemptive rights or other rights to subscribe for or to purchase, or any restriction upon the voting or transfer of any shares of Common Stock pursuant to the Borrower's Organizational Documents or any agreements to which the Borrower or any of its Subsidiaries is a party or by which the Borrower or any of its Subsidiaries is bound.

7. No Further Amendments; Ratification of Liability . Except as amended hereby, the Facility Agreement and each of the other Transaction Documents shall remain in full force and effect in accordance with their respective terms. Borrower as debtor, grantor, pledgor, guarantor or assignor, or in any similar capacity in which it has granted Liens or acted as an accommodation party or guarantor, as the case may be, hereby ratifies, confirms and reaffirms its liabilities, its payment and performance obligations (contingent or otherwise) and its agreements under the Facility Agreement and the other Transaction Documents, all as amended by this Amendment, and the liens and security interests granted, created and perfected thereby. The Purchasers' agreement to the terms of this Amendment or any other amendment of the Facility Agreement or any other Transaction Document shall not be deemed to establish or create a custom or course of dealing among Borrower, Purchasers, Assignees, or any of them. This Amendment, together with the other Transaction Documents, contains the entire agreement among Borrower, and Purchasers contemplated by this Amendment.

8. Purchaser Representation. The Purchasers hereby represent and warrant that the execution of this Amendment will not cause the Purchasers to own, or be treated as owning under the attribution rules of Section 871(h)(3)(C) of the Code, 10% or more of the total combined voting power of the stock of Borrower for purposes of Section 871(h)(3).

9. Incorporation by Reference. The provisions of Article 6 of the Facility Agreement are incorporated herein by reference *mutatis mutandis*.

[Remainder of Page Intentionally Left Blank, signature page follows]

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date set forth above.

BORROWER:

MANNKIND CORPORATION

By: /s/ Matthew J. Pfeffer
Name: Matthew J. Pfeffer
Title: CFO

PURCHASERS:

DEERFIELD PRIVATE DESIGN FUND II, L.P.

By: Deerfield Mgmt., L.P., its General Partner
By: J.E. Flynn Capital, LLC, its General Partner

By: /s/ David J. Clark
Name: David Clark
Title: Authorized Signatory

DEERFIELD PRIVATE DESIGN INTERNATIONAL II, L.P.

By: Deerfield Mgmt., L.P., its General Partner
By: J.E. Flynn Capital, LLC, its General Partner

By: /s/ David J. Clark
Name: David Clark
Title: Authorized Signatory

Exhibit A

Form of Amended and Restated Notes

Exhibit A

THIS NOTE IS BEING ISSUED WITH ORIGINAL ISSUE DISCOUNT ("OID"). THE FOLLOWING INFORMATION IS BEING PROVIDED PURSUANT TO TREASURY REGULATION SECTION 1.1275-3:

ISSUE PRICE: $

AMOUNT OF OID: $

ISSUE DATE:

YIELD TO MATURITY:

THE SECURITY REPRESENTED BY THIS CERTIFICATE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, OR APPLICABLE STATE SECURITIES LAWS. THIS SECURITY MAY NOT BE SOLD, TRANSFERRED OR ASSIGNED, PLEDGED, HYPOTHECATED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER SAID ACT, OR PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER SAID ACT INCLUDING, WITHOUT LIMITATION, PURSUANT TO RULE 144 UNDER SAID ACT."

AMENDED AND RESTATED SENIOR SECURED CONVERTIBLE NOTE

Issuance Date: [July 1] December 9, 2013 Principal: U.S. $[ ]

FOR VALUE RECEIVED, MANNKIND CORPORATION, a Delaware corporation (the "**Company**"), hereby promises to pay to [ ], or its registered assigns (the "**Holder**") the principal amount of [ ] Dollars ($[ ]) (the "**Principal**") pursuant to, and in accordance with, the terms of that certain Facility Agreement, dated as of July 1, 2013, as amended on February 28, 2014, by and among the Company and the Purchasers party thereto (together with all exhibits and schedules thereto and as may be amended, restated, modified and supplemented from time to time, the "**Facility Agreement**"). The Company hereby promises to pay accrued and unpaid Interest (as defined below) and premium, if any, on the Principal on the dates, at the rates and in the manner provided for in the Facility Agreement. This Senior Secured Convertible Note (including all Senior Secured Convertible Notes issued in exchange, transfer or replacement hereof, and as any of the foregoing may be amended, restated, supplemented or otherwise modified from time, this "**Note**") is one of the Senior Secured Convertible Notes issued pursuant to the Facility

Agreement (collectively, including Senior Secured Convertible Notes to be issued pursuant to the Facility Agreement in the future, all Senior Secured Convertible Notes issued in exchange, transfer or replacement thereof, as well as any of the foregoing may be amended, restated, supplemented or otherwise modified from time to time, the "**Notes**"). All capitalized terms used and not otherwise defined herein shall have the respective meanings set forth in the Facility Agreement.

Except as expressly provided in the Facility Agreement, the Company has no right, but under certain circumstances may have an obligation, to make payments of Principal prior to the Final Payment Date. At any time an Event of Default exists, the Principal of this Note, together with all accrued and unpaid Interest and any applicable premium due, if any, may be declared, or shall otherwise become, due and payable in the manner, at the price and with the effect provided in the Facility Agreement.

Definitions.

Certain Defined Terms. For purposes of this Note, the following terms shall have the following meanings:

"**Affiliate**" means any person or entity that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a person or entity, as such terms are used in and construed under Rule 144 under the Securities Act. With respect to a Holder, any investment fund or managed account that is managed on a discretionary basis by the same investment manager as such Holder will be deemed to be an Affiliate of such Holder. As used in this definition of "Affiliate," the term "control" means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through ownership of voting securities or partnership or other ownership interest, by contract, or otherwise.

"**Conversion Amount**" means the Principal amount to be converted.

"**Conversion Commencement Date**" means the eleventh full Trading Day following the public release by the Company of Phase III Data for the Product.

"**Conversion Price**" means, as of any Conversion Date the average of the Volume Weighted Average Prices per Share for the three (3) Trading Day period immediately preceding the Conversion Date (the "**Measurement Period**"), provided, that in the event that a stock split, stock combination, reclassification, payment of stock dividend, recapitalization or other similar transaction of such character that the Shares shall be changed into or become exchangeable for a larger or small number of shares (a "**Stock Event**") is consummated during the Measurement Period, the Volume Weighted Average Price for all Trading Days during the Measurement Period prior to the effectiveness of the Stock Event shall be appropriately adjusted to reflect such Stock Event.

"**Interest**" means any interest (including any default interest) accrued on the Principal pursuant to the terms of this Note and the Facility Agreement.

"**Issuance Date**" means [July 1] [December 9], 2013, regardless of any exchange or replacement hereof.

"**Major Pharmaceutical Company**" means any Person engaged in the pharmaceutical or biotechnology industry who, for the immediately preceding fiscal year, had total revenues in excess of $2,000,000,000 (or its equivalent in another currency).

"**Market Disruption Event**" means, with respect to any trading day and any security, (a) a failure by the Principal Market to open for trading during its entire regular trading session, (b) the occurrence or existence prior to 1:00 p.m., New York City time, on such day for such securities for more than one half-hour period in the aggregate during regular trading hours of any suspension or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the relevant securities exchange or otherwise) in such securities or in any options, contracts or future contracts relating to such securities, or (c) to the extent "Volume Weighted Average Price" is determined in accordance with clause (b) of the definition thereof, the suspension of trading for the one-half hour period ending on the scheduled close of trading on such day (by reason of movements in price exceeding limits permitted by the stock exchange or otherwise) in such securities.

"**Principal**" means the outstanding principal amount of this Note as of any date of determination.

"**Registration Failure**" means that (A) the Company fails to file with the SEC on or before the Filing Deadline (as defined in the Registration Rights Agreement) any Registration Statement required to be filed pursuant to Section 2(a) of the Registration Rights Agreement registering Conversion Shares, (B) the Company fails to use its best efforts to obtain effectiveness with the SEC, prior to the Registration Deadline (as defined in the Registration Rights Agreement), of any Registration Statement (as defined in the Registration Rights Agreement) that is required to be filed pursuant to Section 2(a) of the Registration Rights Agreement registering Conversion Shares, or fails to use its best efforts to keep such Registration Statement current and effective as required in Section 3 of the Registration Rights Agreement, (C) the Company fails to file any additional Registration Statements required to be filed pursuant to Section 2(a)(ii) of the Registration Rights Agreement registering Conversion Shares on or before the Additional Filing Deadline or fails to use its best efforts to cause such new Registration Statement to become effective on or before the Additional Registration Deadline, (D) any Registration Statement required to be filed under the Registration Rights Agreement registering Conversion Shares, after its initial effectiveness and during the Registration Period (as defined in the Registration Rights Agreement), lapses in effect or sales of any Conversion Shares constituting Registrable Securities (as defined in the Registration Rights Agreement) cannot otherwise be made thereunder (whether by reason of the Company's failure to amend or supplement the prospectus included therein in accordance with the Registration Rights Agreement, the Company's failure to file and to obtain effectiveness with the SEC of an additional Registration Statement registering Conversion Shares or amended Registration Statement required pursuant to Sections 2(a)(ii) or 3(b) of the Registration Rights Agreement, as applicable, or otherwise), other than in each case as permitted pursuant to Section 3(q) of the Registration Rights Agreement.

"**Required Note Holders**" means Holders of at least 51% in interest of the Notes.

"**Shares**" means shares of Common Stock, $0.01 par value.

"**Trading Day**" means any day on which the Common Stock is traded for any period on the Principal Market; provided that for purposes of the definition of "Conversion Shares", Trading Day shall not include any Trading Day on which there is a Market Disruption Event. .

"**Volume Weighted Average Price**" for any security as of any Trading Day means (a) the volume weighted average sale price of such security on the principal U.S. national or regional securities exchange on which such security is traded as reported by Bloomberg Financial Markets or an equivalent, reliable reporting service mutually acceptable to and hereinafter designated by the Required Note Holders and the Company (" **Bloomberg**") or (b), if no volume weighted average sale price is reported for such security, then the closing price per share of such security, or, if no closing price per share is reported for such security by Bloomberg, the average of the last bid and last ask price (or if more than one in either case, the average of the average last bid and average last ask prices) on such Trading Day as reported in the composite transactions for the principal U.S. national or regional securities exchange on which such security is traded. If the security is not listed for trading on a U.S. national or regional securities exchange on the relevant Trading Day, then the Volume Weighted Average Price will be the average of the mid-point of the last bid and last ask prices of the security in the over-the-counter market on the relevant Trading Day as reported by the OTC Markets Group, Inc. or similar organization. If the Volume Weighted Average Price cannot be calculated for such security on such date in the manner provided above, the Volume Weighted Average Price shall be the fair market value as mutually determined by the Company and the Holders of a majority in interest of the Notes being converted for which the calculation of the Volume Weighted Average Price is required in order to determine the Conversion Price of such Notes. Volume Weighted Average Price will be determine without regard to after-hours trading or any other trading outside of the regular trading hours.

Conversion Rights. This Note may be converted into Shares on the terms and conditions set forth in this Section 2.

Conversion at Option of the Holder. On and after the Conversion Commencement Date and until the close of business on the second business day immediately prior to the Final Payment Date, the Holder shall be entitled to convert all or any part of the Principal into fully paid and nonassessable Shares (the "**Conversion Shares**") in accordance with this Section 2 at the Conversion Rate (as defined in Section 2(b)); provided that, unless otherwise agreed to by the Company, the Holder shall not be entitled to convert any Principal if the Conversion Price is less than $5.00 per Share [or if the Tranche 3 Notes (as defined in the Facility Agreement) have not been converted in full][1]. The Company shall not issue any fraction of a Share upon any conversion. If the issuance would result in the issuance of a fraction of a Share, then the Company shall round such fraction of a Share up or down to the nearest whole share (with 0.5 rounded up).

[1] Include bracketed language in the Tranche 1 Notes only.

Conversion Rate. The number of Conversion Shares issuable upon a conversion of any portion of this Note pursuant to Section 2 shall be determined according to the following formula (the "**Conversion Rate**"):

$$\frac{\text{Conversion Amount}}{\text{Conversion Price}}$$

Mechanics of Conversion. The conversion of this Note shall be conducted in the following manner:

Holder's Delivery Requirements. To convert a Conversion Amount into Conversion Shares on any date (the "**Conversion Date**"), the Holder shall (A) transmit by facsimile or electronic mail (or otherwise deliver), for receipt on or prior to 5:00 p.m. New York City time on such date, a copy of an executed conversion notice in the form attached hereto as Exhibit A (the "**Conversion Notice**") to the Company (Attention: Matthew Pfeffer, Fax: (661) 775-2099, Email: mpfeffer@mannkindcorp.com), and (B) if required by Section 2(c)(vi), surrender to a common carrier for delivery to the Company, no later than three (3) Business Days after the Conversion Date, the original Note being converted (or an indemnification undertaking in customary form with respect to this Note in the case of its loss, theft or destruction).

Company's Response. Upon receipt or deemed receipt by the Company of a copy of a Conversion Notice, the Company (I) shall immediately send, via facsimile, a confirmation of receipt of such Conversion Notice to the Holder and the Company's designated transfer agent (the "**Transfer Agent**"), which confirmation shall constitute an instruction to the Transfer Agent to process such Conversion Notice in accordance with the terms herein and (II) on or before the second (2nd) Business Day following the date of receipt or deemed receipt by the Company of such Conversion Notice (the "**Share Delivery Date**") (A) provided that the Transfer Agent is participating in The Depository Trust Company ("**DTC**") Fast Automated Securities Transfer Program and provided that the Holder is eligible to receive Shares through DTC, credit such aggregate number of Conversion Shares to which the Holder shall be entitled to the Holder's or its designee's balance account with DTC through its Deposit Withdrawal Agent Commission system, or (B) if the foregoing shall not apply, issue and deliver to the address as specified in the Conversion Notice, a stock certificate, registered in the name of the Holder or its designee, for the number of Conversion Shares to which the Holder shall be entitled. If notwithstanding the provisions of Section 2(c)(vi), the Holder elects to physically surrender this Note for conversion and the Principal represented by this Note is greater than the Principal being converted, then the Company shall, as soon as practicable and in no event later than three (3) Business Days after receipt of this Note (the "**Note Delivery Date**") and at its own expense, issue and deliver to the Holder a new Note representing the Principal not converted and cancel this Note. The Conversion Shares will be freely transferable and will not contain a legend restricting the resale or transferability of the Conversion Shares if the Unrestricted Conditions (as defined below) are met.

Dispute Resolution. In the case of a dispute as to the determination of the Conversion Price or the arithmetic calculation of the Conversion Rate, the Company shall instruct the Transfer Agent to issue to the Holder the number of Conversion Shares that is not disputed and shall transmit an explanation of the disputed determinations or arithmetic calculations to the Holder via facsimile within two (2) Business Days of receipt or deemed receipt of the Holder's Conversion Notice or other date of determination. If the Holder and the Company are unable to agree upon the determination of the Conversion Price or arithmetic calculation of the Conversion Rate within one (1) Business Day of such disputed determination or arithmetic calculation being transmitted to the Holder, then the Company shall promptly (and in any event within two (2) Business Days) submit via facsimile (A) the disputed determination of the Conversion Price to an independent, reputable investment banking firm agreed to by the Company and the Required Note Holders, or (B) the disputed arithmetic calculation of the Conversion Rate to the Company's independent registered public accounting firm, as the case may be. The Company shall direct the investment bank or the accounting firm, as the case may be, to perform the determinations or calculations and notify the Company and the Holder of the results no later than two (2) Business Days from the time it receives the disputed determinations or calculations. Such investment bank's or accounting firm's determination or calculation, as the case may be, shall be binding upon all parties absent manifest error.

Record Holder. The person or persons entitled to receive the Conversion Shares issuable upon a conversion of this Note shall be treated for all purposes as the legal and record holder or holders of such Shares on the Conversion Date, or in the case of Conversion Shares the issuance of which is subject to a *bona fide* dispute that is subject to and being resolved pursuant to, and in compliance with the time periods and other provisions of, the dispute resolution provisions of Section 2(c)(iii), the first Business Day after the resolution of such *bona fide* dispute and the fees and expenses of such investment bank or accountant shall be paid by the Company.

Company's Failure to Timely Convert.

Cash Damages. If within three (3) Business Days after the Company's receipt of the facsimile or electronic mail copy of a Conversion Notice or deemed receipt of a Conversion Notice the Company shall fail to issue and deliver a certificate to the Holder for, or credit the Holder's or its designee's balance account with DTC with, the number of Conversion Shares (free of any restrictive legend if the Unrestricted Conditions (as defined below) are met) to which the Holder is entitled upon the Holder's conversion of any Conversion Amount (a " **Delivery Failure**") then in addition to all other available remedies that the Holder may pursue hereunder and under the Facility Agreement, the Company shall pay additional damages to the Holder for each day after the Share Delivery Date such conversion is not timely effected in an amount equal to one percent (1%) of the product of (I) the number of Conversion Shares not issued to the Holder or its designee on or prior to the Share Delivery Date and to which the Holder is entitled and (II) the Volume Weighted Average Price of the Common Stock on the Share Delivery Date (such product is referred to herein as the " **Share Product Amount**") Alternatively in lieu of the foregoing damages, subject to Section 2(c)(iii), at the written election of the Holder made in the Holder's sole discretion, if, on or after the applicable Conversion Date, the Holder purchases (in an open market transaction or otherwise) shares of Common Stock to

deliver in satisfaction of a sale by such Holder of Conversion Shares that such Holder anticipated receiving from the Company (such purchased shares, "***Buy-In Shares***"), the Company shall be obligated to promptly pay to such Holder (in addition to all other available remedies that the Holder may otherwise have), 107.5% of the amount by which (A) such Holder's total purchase price (including brokerage commissions, if any) for such Buy-In Shares exceeds (B) the net proceeds received by such Holder from the sale of the number of shares equal to up to the number of Conversion Shares such Holder was entitled to receive but had not received on such Share Delivery Date. If the Company fails to pay the additional damages set forth in this Section 2(c)(v)(A) within five (5) Business Days of the date incurred, then the Holder entitled to such payments shall have the right at any time, so long as the Company continues to fail to make such payments, to require the Company, upon written notice, to immediately issue, in lieu of such cash damages, the number of Shares equal to the quotient of (X) the aggregate amount of the damages payments described herein divided by (Y) the Conversion Price specified by the Holder in the Conversion Notice.

Void Conversion Notice. If for any reason the Holder has not received all of the Conversion Shares prior to the tenth (10th) Business Day after the Share Delivery Date with respect to a conversion of this Note (a " **Conversion Failure**"), then the Holder, upon written notice to the Company (a "**Void Conversion Notice**"), may void its Conversion Notice with respect to, and retain or have returned, as the case may be, any portion of this Note that has not been converted pursuant to the Holder's Conversion Notice; provided, that the voiding of the Holder's Conversion Notice shall not affect the Company's obligations to make any payments that have accrued prior to the date of such notice pursuant to Section 2(c)(v)(A) or otherwise.

Book-Entry. Notwithstanding anything to the contrary set forth herein, upon conversion or repayment of this Note in accordance with the terms hereof, the Holder shall not be required to physically surrender this Note to the Company unless all of the Principal is being converted or repaid. The Holder and the Company shall maintain records showing the Principal converted or repaid and the dates of such conversions or repayments or shall use such other method, reasonably satisfactory to the Holder and the Company, so as not to require physical surrender of this Note upon any such partial conversion or repayment. Notwithstanding the foregoing, if this Note is converted or repaid as aforesaid, the Holder may not transfer this Note unless the Holder first physically surrenders this Note to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Note of like tenor, registered as the Holder may request, representing in the aggregate the remaining Principal represented by this Note. The Holder and any assignee, by acceptance of this Note, acknowledge and agree that, by reason of the provisions of this paragraph, following conversion or repayment of any portion of this Note, the Principal of this Note may be less than the principal amount stated on the face hereof.

Taxes. The Company shall pay any and all taxes (excluding income taxes, franchise taxes or other taxes levied on gross earnings, profits or the like of the Holder) that may be payable with respect to the issuance and delivery of Conversion Shares upon the conversion of this Note, unless the tax is due because the Holder requests any Conversion Shares to be issued in a name other than the Holder's name, in which case the Holder will pay that tax.

Legends.

Restrictive Legend. The Holder understands that this Note and until such time as the Conversion Shares have been registered under the Securities Act as contemplated by the Registration Rights Agreement or otherwise may be sold pursuant to Rule 144 under the Securities Act or an exemption from registration under the Securities Act without any restriction as to the number of securities as of a particular date that can then be immediately sold, the Conversion Shares, as applicable, may bear a restrictive legend in substantially the following form (and a stop-transfer order may be placed against transfer of the certificates for such securities):

> THE SECURITY REPRESENTED BY THIS CERTIFICATE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, OR APPLICABLE STATE SECURITIES LAWS. THIS SECURITY MAY NOT BE SOLD, TRANSFERRED OR ASSIGNED, PLEDGED, HYPOTHECATED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER SAID ACT, OR PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER SAID ACT INCLUDING, WITHOUT LIMITATION, PURSUANT TO RULE 144 UNDER SAID ACT."

Removal of Restrictive Legends. The certificates evidencing the Conversion Shares shall not contain any legend restricting the transfer thereof (including the legend set forth above in subsection 2(e)(i)): (A) while a registration statement (including a Registration Statement, as defined in the Registration Rights Agreement) covering the resale of such security by the Holder is effective under the Securities Act, (B) following any sale of such Conversion Shares pursuant to Rule 144, or (C) if such Conversion Shares are eligible for sale under rule 144(b)(1) and the Holder thereof is not, and has not been during the preceding three months, an affiliate (as such term is defined for purposes of Rule 144 under the Securities Act) (the " **Unrestricted Conditions**"). The Holder agrees that the removal of the restrictive legend from the Conversion Shares in accordance with the immediately preceding sentence is predicated upon the Company's reliance that (i) the Holder will dispose of such shares pursuant to the registration requirements of the Securities Act, including any applicable prospectus delivery requirements, or for its own account in compliance with Rule 144, and that if such securities are sold pursuant to a registration statement, they will be sold in compliance with the plan of distribution set forth therein, and (ii) if, prior to the disposition of any such Conversion Shares, the Company notifies the Holder that the Unrestricted Conditions have no longer been met, the Holder will agree to the placement of said restrictive legend on the certificates for such Conversion Shares until the Unrestricted Conditions have once again been met. Promptly following the Effective Date (as defined below) or such other time as any of the Unrestricted Conditions have been satisfied, the Company shall cause its counsel to issue a legal opinion or other instruction to the Transfer Agent (if required by the Transfer Agent) to effect the issuance of the Conversion Shares without a restrictive legend or, in the case of Conversion Shares that have previously been issued, the removal of the legend thereunder. If the Unrestricted Conditions are met at the time of issuance of the Conversion Shares, then the Conversion Shares shall be issued free of all legends. The Company agrees that following the Effective Date or at such time as the Unrestricted Conditions are met or such legend is otherwise no longer required under this Section 2(e), it will, no later than four (4) Trading Days following the delivery (the

"**Unlegended Shares Delivery Deadline**") by the Holder to the Company or the Transfer Agent of any certificate representing Conversion Shares, as applicable, issued with a restrictive legend (such fourth Trading Day, the "**Legend Removal Date**"), deliver or cause to be delivered to such Holder a certificate (or electronic transfer) representing such shares that is free from all restrictive and other legends. For purposes hereof, " **Effective Date**" shall mean the date that the Registration Statement that the Company is required to file pursuant to the Registration Rights Agreement has been declared effective by the SEC.

Sale of Unlegended Shares. Holder agrees that the removal of the restrictive legend from any certificates representing securities as set forth in Section 2(e) above is predicated upon the Company's reliance that the Holder will sell any Conversion Shares pursuant to either the registration requirements of the Securities Act, including any applicable prospectus delivery requirements, or an exemption therefrom, and that if such securities are sold pursuant to a Registration Statement, they will be sold in compliance with the plan of distribution set forth therein.

Limitations on Conversions.

Beneficial Ownership. Notwithstanding anything herein to the contrary, the Company shall not issue to the Holder, and the Holder may not acquire, a number of Shares upon conversion of this Note or otherwise issue any shares of Common Stock pursuant hereto or the Facility Agreement to the extent that, upon such conversion, the number of Shares then beneficially owned by the Holder and its Affiliates and any other persons or entities whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act (including shares held by any "group" of which the Holder is a member, but excluding shares beneficially owned by virtue of the ownership of securities or rights to acquire securities that have limitations on the right to convert, exercise or purchase similar to the limitation set forth herein) would exceed 9.985% of the total number of shares of Common Stock then issued and outstanding (the "**9.985% Cap**"), provided, however, that the 9.985% Cap shall only apply to the extent that the Common Stock is deemed to constitute an "equity security" pursuant to Rule 13d-1(i) promulgated under the Exchange Act, and provided, further, that if the Holder and its Affiliates and any other persons or entities whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act beneficially own on the Issuance Date greater than 9.985% of the shares of Common Stock then outstanding, then the 9.985% Cap shall not apply to such Holder unless and until the beneficial ownership of the Holder and its Affiliates and any other persons or entities whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act subsequently decreases to below 9.985%. For purposes hereof, "group" has the meaning set forth in Section 13(d) of the Exchange Act and applicable regulations of the Securities and Exchange Commission ("**SEC**"), and the percentage held by the Holder shall be determined in a manner consistent with the provisions of Section 13(d) of the Exchange Act. Upon the written request of the Holder, the Company shall, within two (2) Trading Days, confirm orally and in writing to the Holder the number of Shares then outstanding.

Principal Market Regulation. The Company shall not issue any Shares upon conversion of this Note (including pursuant to Section 2(c)(v)(A) hereof) if the

issuance of such Shares together with any previous issuances of Shares under the Notes would exceed 57,885,577 (the " **Exchange Cap**"), except that such limitation shall not apply in the event that the Company obtains the approval of its stockholders as required by the applicable rules of The Nasdaq Global Market and any other Principal Market for issuances of Shares in excess of such amount.

Applicable Limits on Conversion of the Note . Notwithstanding anything to the contrary herein, (A) unless otherwise agreed to by the Company, this Note shall not be convertible, and the Company shall not issue Shares upon conversion of this Note, as a Conversion Price less than $5.00 per Share, [and unless the Tranche 3 Notes have been converted in full][2], (B) this Note shall not be convertible, and the Company shall not issue Shares upon conversion of this Note, if the number of shares that would otherwise be issuable upon such conversion, together with all shares previously issued upon conversion of all Notes or issuable upon conversion of any other Notes converted on the same Conversion Date, exceeds 30 million shares (subject to appropriate adjustment to reflect any Stock Event), and (C) this Note shall not be convertible, and the Company shall not issue Shares upon conversion of this Note, if the number of shares that would otherwise be issuable upon such conversion, together with any shares issuable upon conversion of any other Notes converted on the same Conversion Date, exceeds the then Applicable Limit. For purposes herein, "Applicable Limit" shall initially mean (x) 30 million Shares (subject to appropriate adjustment to reflect any Stock Event) for all conversions of Notes at a "Conversion Price" of $3.33 (subject to appropriate adjustment to reflect any Stock Event) or less, (y) 15 million Shares (subject to appropriate adjustment to reflect any Stock Event) for all conversions of Notes at a "Conversion Price" of $6.67 (subject to appropriate adjustment to reflect any Stock Event) or more, and (z) $100 million of "Conversion Amounts" for all Note conversions at a "Conversion Price" of between $3.33 and $6.67 (subject to appropriate adjustment to reflect any Stock Event); provided, however, that, after each Conversion Date, the Applicable Limit under all three clauses (regardless of which clause such conversion relates to) shall be reduced by an amount equal to the Applicable Limit immediately preceding such conversion multiplied by a fraction, the numerator of which is the number of Shares actually converted on such date (in the case of clauses (x) and (y)) or the applicable "Conversion Amount" for all shares actually converted on such date (in the case of clause (z)) and the denominator of which is the Applicable Limit in respect of the clause under which such conversion falls immediately prior to such conversion. For purposes of illustration: (a) If 15 million shares are converted under any Notes at $3.00 per share, the Applicable Limit shall be reduced by one-half to 15 million, 7.5 million and $50 million, respectively; (b) If an additional $10 million are then converted under any Notes at $5.00 per Share, each Applicable Limit shall then be further reduced by 20% to 12 million, 6 million and $40 million, respectively. As an additional illustration, if 10 million shares are converted under any Notes at $8.00 per share, each Applicable Limit shall be reduced by two-thirds to 10 million, 5 million and $33,333,333, respectively; and (b) if an additional 500,000 shares are then converted under any Notes at $5.00 per share, each Applicable Limit shall be further reduced by 7.5% to $9,250,000, $4,625,000 and $30,833,333, respectively.

[2] Include bracketed language in the Tranche 1 Notes only.

Registration Failures. Upon any Registration Failure, in addition to all other available remedies that the Holder may pursue hereunder and under the Facility Agreement and the Registration Rights Agreement, the Company shall pay additional damages to the Holder for each 30-day period (prorated for any partial period) after the date of such Registration Failure in an amount in cash equal to one percent (1%) of such Holder's original principal amount of this Note on the date of such Registration Failure. Such payments shall accrue until the earlier of (i) such time as the Registration Failure has been cured and (ii) the date on which all of the Conversion Shares may be disposed of for such Holder's own account without restriction under Rule 144 (including, without limitation, volume restrictions and without the need for the availability of current public information under Rule 144), assuming that the Holder is not, and has not been during the preceding three months, an affiliate (as such term is defined for purposes of Rule 144 under the Securities Act) of the Company. All such payments that accrue under this Section (4) shall be payable no later than five business days following such date of accrual.

Voting Rights. Except as required by law, the Holder shall have no voting rights with respect to any of the Conversion Shares until the Conversion Date relating to the conversion of this Note upon which such Conversion Shares are issuable (or in the case of Conversion Shares the issuance of which is subject to a *bona fide* dispute that is subject to and being resolved pursuant to, and in compliance with the time periods and other provisions of, the dispute resolution provisions of Section 2(c)(iii), the first Business Day after the resolution of such *bona fide* dispute).

Amendment; Waiver. The terms and provisions of this Note shall not be amended or waived except in a writing signed by the Company and the Holder.

Remedies, Characterizations, Other Obligations, Breaches and Injunctive Relief. The remedies provided in this Note shall be cumulative and in addition to all other remedies available under this Note, the Facility Agreement, at law or in equity (including a decree of specific performance and/or other injunctive relief). No remedy contained herein shall be deemed a waiver of compliance with the provisions giving rise to such remedy, and nothing herein shall limit the Holder's right to pursue actual damages for any failure by the Company to comply with the terms of this Note. The Company covenants to the Holder that there shall be no characterization concerning this instrument other than as expressly provided herein. Amounts set forth or provided for herein with respect to payments, conversion and the like (and the computation thereof) shall be the amounts to be received by the Holder thereof and shall not, except as expressly provided herein, be subject to any other obligation of the Company (or the performance thereof). The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the Holder shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

Specific Shall Not Limit General; Construction. No specific provision contained in this Note shall limit or modify any more general provision contained herein. This Note shall be deemed to be jointly drafted by the Company and all purchasers of Notes pursuant to the Facility Agreement and shall not be construed against any Person as the drafter hereof.

Failure or Indulgence Not Waiver. No failure or delay on the part of the Holder in the exercise of any power, right or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercise thereof or of any other right, power or privilege.

Notices. Whenever notice is required to be given under this Note, unless otherwise provided herein, such notice shall be given in accordance with Section 6.1 of the Facility Agreement.

Restrictions on Transfer.

Registration or Exemption Required. This Note has been issued in a transaction exempt from the registration requirements of the Securities Act by virtue of Regulation D. None of the Note or the Conversion Shares may be pledged, transferred, sold, assigned, hypothecated or otherwise disposed of except pursuant to an effective registration statement or an exemption to the registration requirements of the Securities Act and applicable state laws including, without limitation, a so-called "4(1) and a half" transaction.

Assignment. Subject to Section 10(a), the Holder may sell, transfer, assign, pledge, hypothecate or otherwise dispose of this Note, in whole or in part; provided that (i) the Holder shall deliver a written notice to Company, substantially in the form of the Assignment attached hereto as Exhibit B, indicating the Person or Persons to whom the Note shall be assigned and the respective principal amount of the Note to be assigned to each assignee, (ii) if such transfer is being effected as a so-called "4(1) and a half" transaction or pursuant to Rule 144A, any such transferee Person shall make the representations and agree to the representations set forth on Exhibit B-1 hereto and shall agree to comply with the provisions of Section 2(c)(iii) hereof, (iii) except in the case of any assignment or transfer pursuant to an effective registration statement covering the disposition of the Note or pursuant to Rule 144, the Holder shall deliver to the Company a legal opinion reasonably acceptable to the Company which, in the case of a so-called "4(1) and a half" transaction shall be substantially in the form attached hereto as Exhibit C, (iv) the transferee shall have complied with Section 2.5(d) of the Facility Agreement, and (v) unless an Event of Default shall have occurred and is continuing, no assignment shall be permitted to any (A) Major Pharmaceutical Company and any (B) entity principally engaged in the business of selling insulin or insulin delivery products (an "**Applicable Entity**"); provided, however, that (1) entities that own, directly or indirectly, equity interests in an Applicable Entity as part of a brokerage, insurance business, pension fund (or other benefit fund), investment banking, investment management, investment advisory, lobbying, or publishing business, or (2) any non-profit research or non-profit enterprise, shall not constitute an Applicable Entity, and (v) the Holder shall comply with all additional assignment provisions set forth in Section 6.5 of the Facility Agreement. The Company shall effect the assignment within three (3) business days (the "**Transfer Delivery Period**"), and shall deliver to the assignee(s) designated by Holder a Note or Notes of like tenor and terms for the appropriate principal amount. This Note and the rights evidenced hereby shall inure to the benefit of and be binding upon the successors and assigns of the Holder. The provisions of this Note are intended to be for the benefit of all Holders from time to time of this Note, and shall be enforceable by any such Holder. For avoidance of doubt, in the event Holder notifies the Company that such sale or transfer is a so called "4(1) and a half" transaction, the parties hereto agree that a legal

opinion from outside counsel for the Holder delivered to counsel for the Company substantially in the form attached hereto as Exhibit C shall be the only requirement to satisfy an exemption from registration under the Securities Act to effectuate such "4(1) and half" transaction.

Payment of Collection, Enforcement and Other Costs. If (a) this Note is placed in the hands of an attorney for collection or enforcement or is collected or enforced through any legal proceeding; or (b) an attorney is retained to represent the Holder in any bankruptcy, reorganization, receivership of the Company or other proceedings affecting Company creditors' rights and involving a claim under this Note, then the Company shall pay the costs incurred by the Holder for such collection, enforcement or action, including reasonable attorneys' fees and disbursements.

Cancellation. After all Principal, Interest and other amounts at any time owed under, or on account of, this Note have been paid in full or converted into Shares in accordance with the terms hereof, this Note shall automatically be deemed cancelled, shall be surrendered to the Company for cancellation and shall not be reissued.

Registered Note. This Note may be transferred only upon notation of such transfer on the Register, and no assignment thereof shall be effective until recorded therein.

Waiver of Notice. To the extent permitted by law, the Company hereby waives demand, notice, presentment, protest and all other demands and notices in connection with the delivery, acceptance, performance, default or enforcement of this Note and the Facility Agreement.

Governing Law. This Note shall be governed by the laws of the State of New York applicable to contracts made and to be performed in such State. All legal proceedings concerning the interpretation and enforcement of this Note shall be commenced exclusively in the state and federal courts sitting in The City of New York. The Company hereby and each Holder (by its acceptance of this Note) irrevocably submits to the exclusive jurisdiction of such courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby, and hereby irrevocably waives, and agrees not to assert in any suit, action or other proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or other proceeding is improper or is an inconvenient venue for such proceeding. The Company hereby and each Holder (by its acceptance of this Note) irrevocably waives personal service of process and consents to process being served in any such suit, action or other proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such person at the address in effect for notices to it under Section 6.1 of the Facility Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. EACH OF THE COMPANY AND THE HOLDER (BY ACCEPTANCE HEREOF) IRREVOCABLY WAIVES THE RIGHT TO A TRIAL BY JURY IN ANY ACTION OR PROCEEDING BROUGHT TO ENFORCE ANY PROVISION OF THIS NOTE OR ANY OTHER TRANSACTION DOCUMENT.

Interpretative Matters. Unless the context otherwise requires, (a) all references to Sections or Exhibits are to Sections or Exhibits contained in or attached to this Note, (b) each accounting term not otherwise defined in this Note has the meaning assigned to it in accordance with GAAP, (c) words in the singular or plural include the singular and plural and pronouns stated in either the masculine, the feminine or neuter gender shall include the masculine, feminine and neuter and (d) the use of the word "including" in this Note shall be by way of example rather than limitation. If a stock split, stock dividend, stock combination or other similar event occurs during any period over which an average price is being determined, then an appropriate adjustment will be made to such average to reflect such event.

Execution. A facsimile, telecopy, PDF or other reproduction of this Note may be delivered by the Company, and an executed copy of this Note may be delivered by the Company by facsimile, e-mail or other similar electronic transmission device pursuant to which the signature of or on behalf of the Company can be seen, and such execution and delivery shall be considered valid, binding and effective for all purposes. The Company hereby agrees that it shall not raise the execution of facsimile, PDF or other reproduction of this Note, or the fact that any signature was transmitted by facsimile, e-mail or other similar electronic transmission device, as a defense to the Company's execution of this Note. Notwithstanding the foregoing, the Company shall be required to deliver an originally executed Note to the Holder.

[Signature page follows]

IN WITNESS WHEREOF, the Company has caused this Note to be duly executed as of the date first set forth above.

COMPANY:

MANNKIND CORPORATION

By: _____

Name: _____

Title: _____

Exhibit A

CONVERSION NOTICE

Reference is made to the Senior Secured Convertible Note (the "**Note**") of **MANNKIND CORPORATION**, a Delaware corporation (the "**Company**"), in the original principal amount of $[ ]. In accordance with and pursuant to the Note, the undersigned hereby elects to convert the Conversion Amount (as defined in the Note) of the Note indicated below into Shares of Common Stock, par value $0.01 per share (the " **Common Stock**"), of the Company, as of the date specified below.

Date of Conversion: _____

Aggregate Conversion Amount to be converted at the Conversion Price (as defined in the Note):

_____

Principal, applicable thereto, to be converted: _____

Please confirm the following information:

Conversion Price: _____

Number of shares of Common Stock to be issued: _____

Please issue the Common Stock into which the Note is being converted in the following name and to the following address:

Issue to: _____

Facsimile Number: _____

Authorization: _____
By: _____
Title: _____

Dated: _____

DTC Participant Number and Name (if electronic book entry transfer): _____

Account Number (if electronic book entry transfer): _____

ACKNOWLEDGMENT

The Company hereby acknowledges this Conversion Notice and hereby directs [TRANSFER AGENT] to issue the above indicated number of shares of Common Stock.

MANNKIND CORPORATION

By: _____

Name: _____

Title: _____

Exhibit B

ASSIGNMENT

(To be executed by the registered holder
desiring to transfer the Note)

FOR VALUE RECEIVED, the undersigned holder of the attached Senior Secured Convertible Note (the "**Note**") hereby sells, assigns and transfers unto the person or persons below named the right to receive the principal amount of $ from Mannkind Corporation, a Delaware corporation, evidenced by the attached Note and does hereby irrevocably constitute and appoint attorney to transfer the said Note on the books of the Company, with full power of substitution in the premises.

Dated: _____

_____
Signature

Fill in for new registration of Note:

_____
Name

_____
Address

_____
Please print name and address of assignee
(including zip code number)

NOTICE

The signature to the foregoing Assignment must correspond to the name as written upon the face of the attached Note in every particular, without alteration or enlargement or any change whatsoever.

Exhibit B-1

[FORM OF INVESTOR REPRESENTATION LETTER]

, 20

[ ]

Gentlemen:

(" ") has agreed to purchase $ principal amount of Senior Secured Convertible Note (the "Note") of [ ] (the "Company") from [ ] ("[ ]"). We understand that the Note is a "restricted security." We represent and warrant that is a sophisticated institutional investor that would qualify as an "Accredited Investor" as defined in Rule 501 of Regulation D under the Securities Act of 1933, as amended (the "Securities Act").

represents and warrants as of the date hereof as follows:

1. That it is acquiring the Note and the shares of common stock, $0.01 par value per share underlying such Note (the "Conversion Shares") solely for its account for investment and not with a view to or for sale or distribution of said Note or Conversion Shares or any part thereof in violation of applicable securities laws, except pursuant to sales registered or exempted under the Securities Act; provided, however, that by making the representations herein, does not agree, or make any representation or warranty, to hold any of the securities for any minimum or other specific term and reserves the right to dispose of the securities at any time in accordance with or pursuant to a registration statement or an exemption under the Securities Act. does not presently have any agreement or understanding, directly or indirectly, with any Person to distribute the Note or the Conversion Shares in violation of applicable securities laws. As used in this Agreement, "**Person**" means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization and a government or any department or agency thereof. also represents that the entire legal and beneficial interests of the Note and Conversion Shares is acquiring is being acquired for, and will be held for, its account only;

2. understands that the Notes and the Conversion Shares have not been registered under the Securities Act in reliance on specific exemptions from the registration requirements of United States federal and state securities laws and in reliance in part upon the truth and accuracy of, and such 's compliance with, the representations, warranties, agreements, acknowledgments and understandings of set forth herein in order to determine the availability of such exemptions and the eligibility of to acquire the securities.

3. That the Note and the Conversion Shares must be held indefinitely unless they are subsequently registered under the Securities Act or an exemption from such registration is available. recognizes that the Company has no obligation to register the Note, or to comply with any exemption from such registration;

4. That neither the Note nor the Conversion Shares may be sold pursuant to Rule 144 adopted under the Securities Act unless certain conditions are met, including, among other things, the existence of a public market for the shares, the availability of certain current public information about the Company, the resale following the required holding period under Rule 144;

5. It is an “accredited investor” as defined in Regulation D promulgated under the Securities Act;

6. That it will not make any disposition of all or any part of the Note or Conversion Shares in any event unless and until:

(i) The Company shall have received a letter secured by from the Securities and Exchange Commission stating that no action will be recommended to the Securities and Exchange Commission with respect to the proposed disposition;

(ii) There is then in effect a registration statement under the Securities Act covering such proposed disposition and such disposition is made in accordance with said registration statement; or

(iii) shall have notified the Company of the proposed disposition and, in the case of a sale or transfer in a so called "4(1) and a half" transaction, shall have furnished counsel to the Company with an opinion of counsel, reasonably satisfactory to counsel to the Company.

We acknowledge that the Company will place stop orders with respect to the Note and the Conversion Shares, and if a registration statement is not effective, the Conversion Shares shall bear the following restrictive legend:

"THE SECURITY REPRESENTED BY THIS CERTIFICATE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, OR APPLICABLE STATE SECURITIES LAWS. THIS SECURITY MAY NOT BE SOLD, TRANSFERRED OR ASSIGNED, PLEDGED, HYPOTHECATED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER SAID ACT, OR PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER SAID ACT INCLUDING, WITHOUT LIMITATION, PURSUANT TO RULE 144 UNDER SAID ACT."

At any time and from time to time after the date hereof, shall, without further consideration, execute and deliver to [ ] or the Company such other instruments or documents and shall take such other actions as they may reasonably request to carry out the transactions contemplated hereby.

Very truly yours,

Exhibit C

FORM OF OPINION

, 20

[ ]

Re: Mannkind Corporation (the "Company")

Dear Sir:

[ ] ("[ ]") intends to transfer its Senior Secured Convertible Note in the principal amount of $ (the "Note") of the Company to (" ") without registration under the Securities Act of 1933, as amended (the "Securities Act"). In connection herewith, we have examined such documents and issues of law as we have deemed relevant.

Based on and subject to the foregoing, we are of the opinion that the transfer of the Note by to may be effected without registration under the Securities Act, provided, however, that the Note to be transferred to contain a legend restricting its transferability pursuant to the Securities Act and that transfer of the Note is subject to a stop order.

The foregoing opinion is furnished only to and may not be used, circulated, quoted or otherwise referred to or relied upon by you for any purposes other than the purpose for which furnished or by any other person for any purpose, without our prior written consent.

Very truly yours,

Exhibit B

Form of Tranche B Note

Exhibit B

THE SECURITY REPRESENTED BY THIS CERTIFICATE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, OR APPLICABLE STATE SECURITIES LAWS. THIS SECURITY MAY NOT BE SOLD, TRANSFERRED OR ASSIGNED, PLEDGED, HYPOTHECATED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER SAID ACT, OR PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER SAID ACT INCLUDING, WITHOUT LIMITATION, PURSUANT TO RULE 144 UNDER SAID ACT.

THIS NOTE MAY BE ISSUED WITH ORIGINAL ISSUE DISCOUNT ("OID") FOR U.S. FEDERAL INCOME TAX PURPOSES. THE ISSUE PRICE OF THIS NOTE SHALL BE MUTUALLY DETERMINED BY THE ORIGINAL HOLDER AND THE COMPANY IN GOOD FAITH AND IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF SECTIONS 1271 THROUGH 1275 OF THE U.S. INTERNAL REVENUE CODE. THE ISSUE PRICE, AMOUNT OF OID, ISSUE DATE AND YIELD TO MATURITY WITH RESPECT TO THIS NOTE MAY BE OBTAINED BY WRITING TO THE BORROWER AT THE FOLLOWING ADDRESS: 28903 NORTH AVENUE PAINE; VALENCIA, CALIFORNIA 91355; ATTENTION: MATTHEW PFEFFER FAX NUMBER: (661) 775-2099.

TRANCHE B SENIOR SECURED NOTE

Issuance Date: [ ], 2014 Principal: U.S. $[ ]

FOR VALUE RECEIVED, MANNKIND CORPORATION, a Delaware corporation (the "**Company**"), hereby promises to pay to [ ], or its registered assigns (the "**Holder**") the principal amount of [ ] Dollars ($[ ]) (the " **Principal**") pursuant to, and in accordance with, the terms of that certain Facility Agreement, dated as of July 1, 2013, as amended on February 28, 2014, by and among the Company and the Purchasers party thereto (together with all exhibits and schedules thereto and as may be amended, restated, modified and supplemented from time to time, the " **Facility Agreement**"). The Company hereby promises to pay accrued and unpaid Interest (as defined below) and premium, if any, on the Principal on the dates, at the rates and in the manner provided for in the Facility Agreement. This Tranche B Senior Secured Note (including all Tranche B Senior Secured Notes issued in exchange, transfer or replacement hereof, and as any of the foregoing may be amended, restated, supplemented or otherwise modified from time, this "**Note**") is one of the Tranche B Senior Secured Notes issued pursuant to the Facility Agreement (collectively, including Tranche B Senior Secured Notes to be issued pursuant to the Facility Agreement in the future, all Tranche B Senior Secured Notes issued in exchange, transfer or

replacement thereof, as well as any of the foregoing may be amended, restated, supplemented or otherwise modified from time to time, the " **Notes**"). All capitalized terms used and not otherwise defined herein shall have the respective meanings set forth in the Facility Agreement.

Except as expressly provided in the Facility Agreement, the Company has no right, but under certain circumstances may have an obligation, to make payments of Principal prior to the Final Payment Date. At any time an Event of Default exists, the Principal of this Note, together with all accrued and unpaid Interest and any applicable premium due, if any, may be declared, or shall otherwise become, due and payable in the manner, at the price and with the effect provided in the Facility Agreement.

Definitions.

Certain Defined Terms. For purposes of this Note, the following terms shall have the following meanings:

"**Affiliate**" means any person or entity that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a person or entity, as such terms are used in and construed under Rule 144 under the Securities Act. With respect to a Holder, any investment fund or managed account that is managed on a discretionary basis by the same investment manager as such Holder will be deemed to be an Affiliate of such Holder. As used in this definition of "Affiliate," the term "control" means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through ownership of voting securities or partnership or other ownership interest, by contract, or otherwise.

"**Interest**" means any interest (including any default interest) accrued on the Principal pursuant to the terms of this Note and the Facility Agreement.

"**Issuance Date**" means [ ], 2014, regardless of any exchange or replacement hereof.

"**Major Pharmaceutical Company**" means any Person engaged in the pharmaceutical or biotechnology industry who, for the immediately preceding fiscal year, had total revenues in excess of $2,000,000,000 (or its equivalent in another currency).

"**Principal**" means the outstanding principal amount of this Note as of any date of determination.

Book-Entry and Legends.

a. Book-Entry. Notwithstanding anything to the contrary set forth herein, upon repayment of this Note in accordance with the terms hereof, the Holder shall not be required to physically surrender this Note to the Company unless all of the Principal is being repaid. The Holder and the Company shall maintain records showing the Principal repaid and the dates of such repayments or shall use such other method, reasonably satisfactory to the Holder and the Company, so as not to require physical surrender of this Note upon any such

partial repayment. Notwithstanding the foregoing, if this Note is repaid as aforesaid, the Holder may not transfer this Note unless the Holder first physically surrenders this Note to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Note of like tenor, registered as the Holder may request, representing in the aggregate the remaining Principal represented by this Note. The Holder and any assignee, by acceptance of this Note, acknowledge and agree that, by reason of the provisions of this paragraph, following repayment of any portion of this Note, the Principal of this Note may be less than the principal amount stated on the face hereof.

Legends. The Holder understands that this Note may bear a restrictive legend in substantially the following form (and a stop-transfer order may be placed against transfer of the certificates for such securities):

> "THE SECURITY REPRESENTED BY THIS CERTIFICATE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, OR APPLICABLE STATE SECURITIES LAWS. THIS SECURITY MAY NOT BE SOLD, TRANSFERRED OR ASSIGNED, PLEDGED, HYPOTHECATED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER SAID ACT, OR PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER SAID ACT INCLUDING, WITHOUT LIMITATION, PURSUANT TO RULE 144 UNDER SAID ACT."

Amendment; Waiver. The terms and provisions of this Note shall not be amended or waived except in a writing signed by the Company and the Holder.

Remedies, Characterizations, Other Obligations, Breaches and Injunctive Relief . The remedies provided in this Note shall be cumulative and in addition to all other remedies available under this Note, the Facility Agreement, at law or in equity (including a decree of specific performance and/or other injunctive relief). No remedy contained herein shall be deemed a waiver of compliance with the provisions giving rise to such remedy, and nothing herein shall limit the Holder's right to pursue actual damages for any failure by the Company to comply with the terms of this Note. The Company covenants to the Holder that there shall be no characterization concerning this instrument other than as expressly provided herein. Amounts set forth or provided for herein with respect to payments and the like (and the computation thereof) shall be the amounts to be received by the Holder thereof and shall not, except as expressly provided herein, be subject to any other obligation of the Company (or the performance thereof). The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the Holder shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

Specific Shall Not Limit General; Construction . No specific provision contained in this Note shall limit or modify any more general provision contained herein. This Note shall be deemed to be jointly drafted by the Company and all purchasers of Notes pursuant to the Facility Agreement and shall not be construed against any Person as the drafter hereof.

Failure or Indulgence Not Waiver. No failure or delay on the part of the Holder in the exercise of any power, right or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercise thereof or of any other right, power or privilege.

Notices. Whenever notice is required to be given under this Note, unless otherwise provided herein, such notice shall be given in accordance with Section 6.1 of the Facility Agreement.

Restrictions on Transfer.

Registration or Exemption Required. This Note has been issued in a transaction exempt from the registration requirements of the Securities Act by virtue of Regulation D. This Note may not be pledged, transferred, sold, assigned, hypothecated or otherwise disposed of except pursuant to an effective registration statement or an exemption to the registration requirements of the Securities Act and applicable state laws including, without limitation, a so-called "4(1) and a half" transaction.

Assignment. Subject to Section 8(a), the Holder may sell, transfer, assign, pledge, hypothecate or otherwise dispose of this Note, in whole or in part; provided that (i) the Holder shall deliver a written notice to Company, substantially in the form of the Assignment attached hereto as Exhibit A, indicating the Person or Persons to whom the Note shall be assigned and the respective principal amount of the Note to be assigned to each assignee, (ii) if such transfer is being effected as a so-called "4(1) and a half" transaction or pursuant to Rule 144A, any such transferee Person shall make the representations and agree to the representations set forth on Exhibit A-1 hereto, (iii) except in the case of any assignment or transfer pursuant to an effective registration statement covering the disposition of the Note or pursuant to Rule 144, the Holder shall deliver to the Company a legal opinion reasonably acceptable to the Company which, in the case of a so-called "4(1) and a half" transaction shall be substantially in the form attached hereto as Exhibit B, (iv) the transferee shall have complied with Section 2.5(d) of the Facility Agreement, and (v) unless an Event of Default shall have occurred and is continuing, no assignment shall be permitted to any (A) Major Pharmaceutical Company and any (B) entity principally engaged in the business of selling insulin or insulin delivery products (an "**Applicable Entity**"); provided, however, that (1) entities that own, directly or indirectly, equity interests in an Applicable Entity as part of a brokerage, insurance business, pension fund (or other benefit fund), investment banking, investment management, investment advisory, lobbying, or publishing business, or (2) any non-profit research or non-profit enterprise, shall not constitute an Applicable Entity, and (v) the Holder shall comply with all additional assignment provisions set forth in Section 6.5 of the Facility Agreement. The Company shall effect the assignment within three (3) business days (the "**Transfer Delivery Period**"), and shall deliver to the assignee(s) designated by Holder a Note or Notes of like tenor and terms for the appropriate principal amount. This Note and the rights evidenced hereby shall inure to the benefit of and be binding upon the successors and assigns of the Holder. The provisions of this Note are intended to be for the benefit of all Holders from time to time of this Note, and shall be enforceable by any such Holder. For avoidance of doubt, in the event Holder notifies the Company that such sale or transfer is a so called "4(1) and a half" transaction, the parties hereto agree that a legal

opinion from outside counsel for the Holder delivered to counsel for the Company substantially in the form attached hereto as Exhibit B shall be the only requirement to satisfy an exemption from registration under the Securities Act to effectuate such "4(1) and half" transaction.

Payment of Collection, Enforcement and Other Costs. If (a) this Note is placed in the hands of an attorney for collection or enforcement or is collected or enforced through any legal proceeding; or (b) an attorney is retained to represent the Holder in any bankruptcy, reorganization, receivership of the Company or other proceedings affecting Company creditors' rights and involving a claim under this Note, then the Company shall pay the costs incurred by the Holder for such collection, enforcement or action, including reasonable attorneys' fees and disbursements.

Cancellation. After all Principal, Interest and other amounts at any time owed under, or on account of, this Note have been paid in full in accordance with the terms hereof, this Note shall automatically be deemed cancelled, shall be surrendered to the Company for cancellation and shall not be reissued.

Registered Note. This Note may be transferred only upon notation of such transfer on the Register, and no assignment thereof shall be effective until recorded therein.

Waiver of Notice. To the extent permitted by law, the Company hereby waives demand, notice, presentment, protest and all other demands and notices in connection with the delivery, acceptance, performance, default or enforcement of this Note and the Facility Agreement.

Governing Law. This Note shall be governed by the laws of the State of New York applicable to contracts made and to be performed in such State. All legal proceedings concerning the interpretation and enforcement of this Note shall be commenced exclusively in the state and federal courts sitting in The City of New York. The Company hereby and each Holder (by its acceptance of this Note) irrevocably submits to the exclusive jurisdiction of such courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby, and hereby irrevocably waives, and agrees not to assert in any suit, action or other proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or other proceeding is improper or is an inconvenient venue for such proceeding. The Company hereby and each Holder (by its acceptance of this Note) irrevocably waives personal service of process and consents to process being served in any such suit, action or other proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such person at the address in effect for notices to it under Section 6.1 of the Facility Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. EACH OF THE COMPANY AND THE HOLDER (BY ACCEPTANCE HEREOF) IRREVOCABLY WAIVES THE RIGHT TO A TRIAL BY JURY IN ANY ACTION OR PROCEEDING BROUGHT TO ENFORCE ANY PROVISION OF THIS NOTE OR ANY OTHER TRANSACTION DOCUMENT.

Interpretative Matters. Unless the context otherwise requires, (a) all references to Sections or Exhibits are to Sections or Exhibits contained in or attached to this Note, (b) each accounting term not otherwise defined in this Note has the meaning assigned to it in accordance with GAAP, (c) words in the singular or plural include the singular and plural and pronouns stated in either the masculine, the feminine or neuter gender shall include the masculine, feminine and neuter and (d) the use of the word "including" in this Note shall be by way of example rather than limitation. If a stock split, stock dividend, stock combination or other similar event occurs during any period over which an average price is being determined, then an appropriate adjustment will be made to such average to reflect such event.

Execution. A facsimile, telecopy, PDF or other reproduction of this Note may be delivered by the Company, and an executed copy of this Note may be delivered by the Company by facsimile, e-mail or other similar electronic transmission device pursuant to which the signature of or on behalf of the Company can be seen, and such execution and delivery shall be considered valid, binding and effective for all purposes. The Company hereby agrees that it shall not raise the execution of facsimile, PDF or other reproduction of this Note, or the fact that any signature was transmitted by facsimile, e-mail or other similar electronic transmission device, as a defense to the Company's execution of this Note. Notwithstanding the foregoing, the Company shall be required to deliver an originally executed Note to the Holder.

[Signature page follows]

IN WITNESS WHEREOF, the Company has caused this Note to be duly executed as of the date first set forth above.

COMPANY:

MANNKIND CORPORATION

By: _____

Name: _____

Title: _____

Exhibit A

ASSIGNMENT

(To be executed by the registered holder
desiring to transfer the Note)

FOR VALUE RECEIVED, the undersigned holder of the attached Tranche B Senior Secured Note (the "**Note**") hereby sells, assigns and transfers unto the person or persons below named the right to receive the principal amount of $ from MannKind Corporation, a Delaware corporation, evidenced by the attached Note and does hereby irrevocably constitute and appoint attorney to transfer the said Note on the books of the Company, with full power of substitution in the premises.

Dated: _____

_____
Signature

Fill in for new registration of Note:

_____
Name

_____
Address

_____
Please print name and address of assignee
(including zip code number)

NOTICE

The signature to the foregoing Assignment must correspond to the name as written upon the face of the attached Note in every particular, without alteration or enlargement or any change whatsoever.

Exhibit A-1

[FORM OF INVESTOR REPRESENTATION LETTER]

, 20

[ ]

Gentlemen:

(" ") has agreed to purchase $ principal amount of Tranche B Senior Secured Note (the "Note") of [ ] (the "Company") from [ ] ("[ ]"). We understand that the Note is a "restricted security." We represent and warrant that is a sophisticated institutional investor that would qualify as an "Accredited Investor" as defined in Rule 501 of Regulation D under the Securities Act of 1933, as amended (the "Securities Act").

represents and warrants as of the date hereof as follows:

1. That it is acquiring the Note solely for its account for investment and not with a view to or for sale or distribution of said Note or any part thereof in violation of applicable securities laws, except pursuant to sales registered or exempted under the Securities Act; provided, however, that by making the representations herein, does not agree, or make any representation or warranty, to hold any of the securities for any minimum or other specific term and reserves the right to dispose of the securities at any time in accordance with or pursuant to a registration statement or an exemption under the Securities Act. does not presently have any agreement or understanding, directly or indirectly, with any Person to distribute the Note in violation of applicable securities laws. As used in this Agreement, "**Person**" means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization and a government or any department or agency thereof. also represents that the entire legal and beneficial interests of the Note is acquiring is being acquired for, and will be held for, its account only;

2. understands that the Notes have not been registered under the Securities Act in reliance on specific exemptions from the registration requirements of United States federal and state securities laws and in reliance in part upon the truth and accuracy of, and such 's compliance with, the representations, warranties, agreements, acknowledgments and understandings of set forth herein in order to determine the availability of such exemptions and the eligibility of to acquire the securities.

3. That the Note must be held indefinitely unless they are subsequently registered under the Securities Act or an exemption from such registration is available. recognizes that the Company has no obligation to register the Note, or to comply with any exemption from such registration;

4. That the Note may not be sold pursuant to Rule 144 adopted under the Securities Act unless certain conditions are met, including, among other things, the existence of a public market for the shares, the availability of certain current public information about the Company, the resale following the required holding period under Rule 144;

5. It is an "accredited investor" as defined in Regulation D promulgated under the Securities Act;

6. That it will not make any disposition of all or any part of the Note in any event unless and until:

(i) The Company shall have received a letter secured by from the Securities and Exchange Commission stating that no action will be recommended to the Securities and Exchange Commission with respect to the proposed disposition;

(ii) There is then in effect a registration statement under the Securities Act covering such proposed disposition and such disposition is made in accordance with said registration statement; or

(iii) shall have notified the Company of the proposed disposition and, in the case of a sale or transfer in a so called "4(1) and a half" transaction, shall have furnished counsel to the Company with an opinion of counsel, reasonably satisfactory to counsel to the Company.

We acknowledge that the Company will place stop orders with respect to the Note shall bear the following restrictive legend:

"THE SECURITY REPRESENTED BY THIS CERTIFICATE HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, OR APPLICABLE STATE SECURITIES LAWS. THIS SECURITY MAY NOT BE SOLD, TRANSFERRED OR ASSIGNED, PLEDGED, HYPOTHECATED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER SAID ACT, OR PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER SAID ACT INCLUDING, WITHOUT LIMITATION, PURSUANT TO RULE 144 UNDER SAID ACT."

At any time and from time to time after the date hereof, shall, without further consideration, execute and deliver to [ ] or the Company such other instruments or documents and shall take such other actions as they may reasonably request to carry out the transactions contemplated hereby.

Very truly yours,

Exhibit B

FORM OF OPINION

, 20

[ ]

Re: Mannkind Corporation (the "Company")

Dear Sir:

[ ] ("[ ]") intends to transfer its Tranche B Senior Secured Note in the principal amount of $ (the "Note") of the Company to (" ") without registration under the Securities Act of 1933, as amended (the "Securities Act"). In connection herewith, we have examined such documents and issues of law as we have deemed relevant.

Based on and subject to the foregoing, we are of the opinion that the transfer of the Note by to may be effected without registration under the Securities Act, provided, however, that the Note to be transferred to contain a legend restricting its transferability pursuant to the Securities Act and that transfer of the Note is subject to a stop order.

The foregoing opinion is furnished only to and may not be used, circulated, quoted or otherwise referred to or relied upon by you for any purposes other than the purpose for which furnished or by any other person for any purpose, without our prior written consent.

Very truly yours,

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-183679 and 333-190040 on Form S-3 and Registration Statement Nos. 333-117811, 333-127876, 333-137332, 333-149049, 333-160225, 333-176409, 333-182457 and 333-188790 on Form S-8 of our reports dated March 3, 2014, relating to the consolidated financial statements of MannKind Corporation and subsidiaries (a development stage company) ("MannKind Corporation") (which report expresses an unqualified opinion and includes an explanatory paragraph relating to the Company's ability to continue as a going concern), and the effectiveness of MannKind Corporation's internal control over financial reporting, appearing in the Annual Report on Form 10-K of MannKind Corporation for the year ended December 31, 2013.

/s/ Deloitte & Touche LLP

Los Angeles, California
March 3, 2014

Exhibit 31.1

RULE 13a-14(a)/15d-14(a) CERTIFICATION

I, Alfred E. Mann, certify that:

1. I have reviewed this Annual Report on Form 10-K of MannKind Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Alfred E. Mann
Alfred E. Mann
Chief Executive Officer and
Chairman of the Board of Directors

Date: March 3, 2014

Exhibit 31.2

RULE 13a-14(a)/15d-14(a) CERTIFICATION

I, Matthew J. Pfeffer, certify that:

1. I have reviewed this Annual Report on Form 10-K of MannKind Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Matthew J. Pfeffer
Matthew J. Pfeffer
Corporate Vice President and
Chief Financial Officer

Date: March 3, 2014

Exhibit 32

CERTIFICATION[1]

Pursuant to the requirement set forth in Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), Alfred E. Mann, Chief Executive Officer of MannKind Corporation (the "Company"), and Matthew J. Pfeffer, Chief Financial Officer of the Company, each hereby certifies that, to the best of his knowledge:

1. The Company's Annual Report on Form 10-K for the period ended December 31, 2013, to which this Certification is attached as Exhibit 32 (the "Annual Report") fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act, and

2. The information contained in the Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned have set their hands hereto as of the 3rd day of March 2014.

/s/ Alfred E. Mann	/s/ Matthew J. Pfeffer
Alfred E. Mann	Matthew J. Pfeffer
Chief Executive Officer	Corporate Vice President and Chief Financial Officer

[1] This certification accompanies the Annual Report on Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of MannKind Corporation under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Annual Report on Form 10-K to which this certification relates), irrespective of any general incorporation language contained in such filing.