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

Amendment No. 2

to

Form S-1

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

MannKind Corporation

(Exact name of registrant as specified in its charter)

Delaware
*(State or other jurisdiction of
incorporation or organization)*

2834
*(Primary Standard Industrial
Classification Code Number)*

13-3607736
*(I.R.S. Employer
Identification No.)*

28903 North Avenue Paine

Valencia, California 91355
(661) 775-5300

*(Address, including zip code, and telephone number, including area code,
of registrant's principal executive offices)*

Alfred E. Mann

Chief Executive Officer and Chairman
MannKind Corporation
28903 North Avenue Paine
Valencia, California 91355
(661) 775-5300

*(Name, address, including zip code, and telephone number,
including area code, of agent for service)*

Copies to:

Frederick T. Muto, Esq.
Jeremy D. Glaser, Esq.
Cooley Godward LLP
4401 Eastgate Mall
San Diego, California 92121
(858) 550-6000

Robert M. Smith, Esq.
Dewey Ballantine LLP
1950 University Avenue, Suite 500
East Palo Alto, California 94303-2225
(650) 845-7000

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

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

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

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

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

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box:

Calculation of Registration Fee

Title of Each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee
Common Stock, par value \$0.01 per share	\$88,550,000	\$11,220 ⁽²⁾

- (1) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended. Includes \$11,550,000 of shares that the underwriters have the option to purchase to cover over-allotments.
- (2) \$10,928 of this amount was previously paid.

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

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

PRELIMINARY PROSPECTUS

Subject to completion

July 6, 2004

5,500,000 Shares



MannKind Corporation

Common Stock

This is the initial public offering of our common stock. No public market currently exists for our common stock. We are offering all of the 5,500,000 shares of our common stock offered by this prospectus. We expect the public offering price to be between \$13.00 and \$15.00 per share.

We have applied to have our common stock approved for quotation on The Nasdaq National Market under the symbol "MNKD."

Investing in our common stock involves a high degree of risk. Before buying any shares, you should carefully read the discussion of material risks of investing in our common stock in "Risk factors" beginning on page 9 of this prospectus.

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

	Per share	Total
Public offering price	\$	\$
Underwriting discounts and commissions	\$	\$
Proceeds, before expenses, to us	\$	\$

The underwriters may also purchase up to an additional 825,000 shares of our common stock at the public offering price, less the underwriting discounts and commissions payable by us, to cover over-allotments, if any, within 30 days from the date of this prospectus. If the underwriters exercise this option in full, the total underwriting discounts and commissions will be \$ _____ and our total proceeds, before expenses, will be \$ _____.

The underwriters are offering the common stock as set forth under "Underwriting." Delivery of the shares will be made on or about _____, 2004.

UBS Investment Bank

Piper Jaffray

Wachovia Securities

Jefferies & Company, Inc.

Harris Nesbitt

You should rely only on the information provided in this prospectus. We have not, and the underwriters have not, authorized anyone to provide you with additional information or information different from that contained in this prospectus. We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of shares of our common stock.

Through and including _____, 2004 (the 25th day after the date of this prospectus), federal securities laws may require all dealers that effect transactions in our common stock, whether or not participating in this offering, to deliver a prospectus. This is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

Prospectus summary	1
Risk factors	9
Special note regarding forward-looking statements	29
Use of proceeds	30
Dividend policy	30
Capitalization	31
Dilution	33
Selected financial data	35
Management’s discussion and analysis of financial condition and results of operations	38
Business	49
Management	72
Certain relationships and related party transactions	96
Principal stockholders	101
Description of capital stock	103
Shares eligible for future sale	110
Underwriting	113
Legal matters	117
Experts	117
Where you can find additional information	117
Index to financial statements	F-1
Exhibit 3.5	
Exhibit 3.7	
Exhibit 10.3	
Exhibit 10.16	
Exhibit 10.17	
Exhibit 10.18	
Exhibit 10.19	
Exhibit 10.20	
Exhibit 23.1	

Technosphere® is our registered trademark and we have applied to register MedTone™ with the US Patent and Trademark office. We have also applied for or registered company trademarks in other jurisdictions, including Europe and Japan. This prospectus also contains trademarks and service marks of other companies that are the property of their respective owners.

Prospectus summary

This summary highlights selected information appearing elsewhere in this prospectus and may not contain all of the information that is important to you. This prospectus includes information about the shares we are offering as well as information regarding our business and detailed financial data. You should read this prospectus in its entirety. Unless the context requires otherwise, the words “MannKind,” “we,” “company,” “us” and “our” refer to MannKind Corporation and its subsidiary.

OVERVIEW

We are a biopharmaceutical company focused on the discovery, development and commercialization of therapeutic products for diseases such as diabetes, cancer, inflammatory and autoimmune diseases. Our lead product, the Technosphere Insulin System, which is currently in late Phase II clinical trials for the treatment of diabetes, consists of our dry powder Technosphere formulation of insulin and our MedTone inhaler through which the powder is inhaled into the deep lung. On the basis of our clinical findings to date and our understanding of current diabetes therapy, we believe the performance characteristics, convenience and ease of use of our proprietary Technosphere Insulin System have the potential to change the way diabetes is treated.

We have discovered and developed the majority of our technology, including the technology associated with our Technosphere Insulin System and our cancer therapy. Currently, our operations encompass research, preclinical and clinical development as well as pharmaceutical manufacturing. We currently outsource the manufacture of our MedTone inhaler. As our products mature, we intend to either enter into sales and marketing collaborations with other companies, if available on commercially reasonable terms, or develop these capabilities ourselves.

According to the American Diabetes Association, in the United States diabetes is estimated to cost society over \$132 billion each year and is currently the fifth leading cause of death by disease. The United States Centers for Disease Control, or CDC, estimated that as of 2002 approximately 18.2 million people in the United States, or 6.3% of the population, suffered from type 1 or type 2 diabetes. The CDC further estimated that 13 million cases were diagnosed and under treatment as of 2002 and that 1.3 million new cases would be diagnosed per year beyond that date. According to the CDC, type 2 diabetes is the more prevalent form of the disease, affecting approximately 90% to 95% of people diagnosed with diabetes.

Typically, the treatment of type 2 diabetes starts with management by diet and exercise and progresses to treatment with various non-insulin oral medications and then to treatment with insulin. Treatment through diet and exercise has not been an effective long-term solution for the vast majority of patients with type 2 diabetes. Non-insulin oral medications, which act by increasing the amount of insulin produced by the pancreas or by increasing the sensitivity of insulin-sensitive cells, generally have significant adverse effects and are limited in their ability to manage the disease effectively. Insulin therapy usually involves administering several subcutaneous injections of insulin each day. However, this treatment regimen is inadequate for many reasons, including the inconvenience and pain associated with injections that lead patients not to comply adequately with the prescribed treatment.

Because of the problems associated with the conventional administration of insulin by injection, patients and their physicians have sought alternative methods for the delivery of insulin. One alternative to conventional insulin therapy being pursued by a number of pharmaceutical and biotechnology companies is the inhalation of an insulin formulation into the deep lung, where it can be absorbed directly into the bloodstream. Delivering insulin through the pulmonary route is less invasive than administering it by injection, which, we believe, should increase patient compliance. We anticipate that the first pulmonary insulin product developed by another pharmaceutical company may be ready for commercial sale as early as 2005. However, we believe this product, as well as other pulmonary insulin products in development of which we are aware, will not address a significant shortcoming of conventional insulin therapy. In particular, based on several published reports,

Table of Contents

including a 2004 review article published in *Diabetes Care*, it would appear that these pulmonary insulin products, if and when approved, may not deliver insulin to the bloodstream rapidly enough to approximate the so-called first-phase insulin release spike that is observed in healthy individuals.

The first-phase insulin release spike occurs when a healthy person begins to eat a meal. At the beginning of the meal, the body responds with a sharp spike of insulin release that acts as a signal to the liver to shut off its release of glucose into the bloodstream. This signal turns off the source of glucose that fuels the body between meals at a time when glucose is being supplied from food. Individuals with diabetes cannot produce a first-phase insulin release spike, so their liver continues to release glucose while they absorb additional glucose from the meal. As a result, these individuals develop abnormally high levels of blood glucose, which predisposes them to serious, adverse health consequences.

In contrast, we have observed in our clinical trials to date that our Technosphere Insulin System produces a profile of insulin levels in the bloodstream that does approximate the natural first-phase insulin release spike. In particular, inhalation of Technosphere Insulin generally produces a rapid increase in blood insulin levels that peaks within 10-14 minutes. As illustrated by the charts on page 52, the time-to-peak blood insulin levels produced by the Technosphere Insulin System approximates the rapid rise that has been demonstrated for first-phase insulin release in healthy individuals, which generally occurs within six minutes after food reaches the digestive system.

To date, we have conducted multiple Phase I and Phase II clinical trials of our Technosphere Insulin System involving more than 200 individuals in Europe and the United States. We are currently conducting late Phase II clinical trials to determine dosage tolerance and optimal dosing, which, when fully-enrolled, will involve approximately 340 individuals with type 2 diabetes in Europe and the United States. We expect results from some of these clinical trials to be available in the fourth quarter of 2004 with additional data to follow in early 2005. We intend to initiate Phase III clinical trials in the United States in the first half of 2005, subject to acceptance of our Phase III protocols by the United States Food and Drug Administration, or FDA. Because our studies involved a fairly small number of participants, we cannot be certain that we will be able to repeat and validate our results until we have completed larger studies of efficacy and longer-term safety.

FEATURES OF OUR DIABETES THERAPY

We believe that our Technosphere Insulin System has a number of attractive performance characteristics, including:

- *Approximates natural first-phase insulin release spike.* Typically, regular insulin delivered by subcutaneous injection results in peak insulin levels in about 120 to 180 minutes. Insulin suppliers have developed “rapid-acting” insulin analogs, which are variations of insulin that reach peak blood levels in 30 to 90 minutes. Based on our analysis of published reports, including a 2004 review article in *Diabetes Care*, we believe that other pulmonary insulin products in development deliver peak insulin levels in 35 to 90 minutes. In contrast, our clinical trials have shown that our Technosphere Insulin System produces peak insulin levels in 10 to 14 minutes, which approximates the timing of the body’s natural first-phase insulin release spike.
- *Ease of use.* Our MedTone inhaler is light, is easy to use and fits in the palm of the patient’s hand. To administer a dose, the patient opens the device, inserts a single-dose cartridge of Technosphere Insulin powder into the inhaler, inserts the mouthpiece into the mouth and takes a deep breath, thereby drawing the powder deep into the lungs. Moreover, the optimal time for taking a dose of Technosphere Insulin appears to be at the start of a meal or shortly thereafter, so we believe there would be no need for a user to try to time an injection 15 to 45 minutes before the expected mealtime.
- *More efficient delivery of pulmonary insulin.* Based on our clinical trials of Technosphere Insulin and on our analysis of publicly available information regarding the performance of other

Table of Contents

pulmonary insulin systems in development, we believe that the inhalation of a specified amount of insulin formulated as Technosphere Insulin produces blood insulin levels over a measured period of time that are approximately three times greater than that produced by the same amount of insulin administered via the pulmonary delivery systems being developed by other pharmaceutical companies.

- *Safety.* Based on our clinical trials to date, Technosphere Insulin has not generated any serious, drug-related adverse events in our clinical trials to date, but these results are necessarily preliminary until we have completed long term safety studies.

Because of these advantages, we believe our Technosphere Insulin System will be beneficial in patients that have advanced to the point of requiring conventional insulin therapy, patients that are being treated with non-insulin oral medications as well as patients currently using diet and exercise therapy but who are having difficulty achieving proper blood glucose control. If further clinical trials confirm our observations to date, we believe that our Technosphere Insulin System has the potential to be indicated for the treatment of type 2 diabetes after a patient has failed to respond adequately to diet and exercise alone. The use of insulin earlier in the progression of diabetes would represent a paradigm shift in the treatment of this disease.

OUR STRATEGY FOR DIABETES THERAPY

- *Commercialize our Technosphere Insulin System for the insulin-using diabetes market.* We intend to advance our Technosphere Insulin System into and through Phase III clinical trials and then into commercialization, with the goal of establishing a significant presence for Technosphere Insulin in the insulin-using diabetes market.
- *Establish our Technosphere Insulin System as the preferred drug therapy within the broader population of people with type 2 diabetes.* Our target markets also include patients with type 2 diabetes who are currently using conventional therapies other than insulin, such as management by diet and exercise and by non-insulin oral medications. Given the potential advantages of our product, we believe our Technosphere Insulin System has the potential to become the preferred drug therapy for the broader type 2 diabetes population.
- *Seek a strategic collaboration for the development, marketing and commercialization of our Technosphere Insulin System.* We are actively exploring collaborations with large pharmaceutical companies in the United States, Europe and Japan that would provide marketing, sales and financial resources to develop, commercialize and sell our Technosphere Insulin System. To date, we have not licensed or transferred any of our rights to this product and we believe this will enable us to obtain advantageous terms in potential collaborations. We intend to retain worldwide manufacturing rights for our Technosphere Insulin System.

We expect that our revenues from our Technosphere Insulin System will come from the sale of Technosphere Insulin cartridges and the MedTone inhaler. We expect that our costs will be the expenses to produce Technosphere Insulin cartridges and the inhalers, selling and marketing expenses if we elect to proceed without a collaborator, research expenses to expand our Technosphere platform technology and develop other potential products, as well as general and administrative expenses.

OUR RESEARCH PROGRAMS

We are developing additional applications for our proprietary Technosphere formulation technology by formulating other drugs for pulmonary delivery, primarily for metabolic and immunological diseases. We believe our proprietary Technosphere formulation technology can also be extended to other forms of local administration, such as gastrointestinal delivery, because of its apparent ability to stabilize drugs and facilitate transport across cellular membranes.

Table of Contents

We are also developing therapies for the treatment of solid-tumor cancers. We have conducted initial studies of our cancer therapy in Europe and the United States, including Phase I and II clinical trials in the United States that involved 42 patients who had progressed to late stages of skin cancer. We observed that the delivery of a prototype formulation was well tolerated by patients and produced an appropriate response by their immune system. Although we believe that our clinical data to date have been encouraging, we have continued to refine our cancer therapy program. We have developed several product candidates and expect to begin preclinical safety tests for one of these product candidates later this year, with the goal of commencing clinical trials in 2005.

RISKS ASSOCIATED WITH OUR BUSINESS

We face a number of challenges in bringing the Technosphere Insulin System to market. We have not received regulatory approval for this product, nor do we expect to be the first company to bring a pulmonary insulin product to market. In order to complete the clinical trials for our Technosphere Insulin System and develop the sales and marketing capabilities necessary to commercialize the product, we will need to raise additional capital or enter into a collaborative agreement with a pharmaceutical company or both.

We are subject to a number of risks, which you should be aware of before you decide to buy our common stock. These risks are discussed more fully in "Risk factors." We are a development stage company with no commercial products. We have not received commercial revenues from any of our product candidates. It is possible that we may never successfully commercialize any of our product candidates. As of March 31, 2004, we had an accumulated deficit of \$383.4 million. We expect to continue to incur losses over at least the next several years, and we may never become profitable. Since our inception, we have funded our operations principally through the sale of equity securities, and we expect that we will need to secure additional funding or raise additional capital to enable us to continue to develop and commercialize our Technosphere Insulin System and other product candidates and for other reasons. We cannot assure you that we will be able to obtain additional financing on acceptable terms, or at all.

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. Our website address is <http://www.mannkindcorp.com>. The information contained in, and that can be accessed through, our website is not incorporated into and does not form a part of this prospectus.

The offering

Common stock offered by us 5,500,000 shares

Common stock to be outstanding after this offering 31,641,513 shares

Use of proceeds We estimate that the net proceeds from this offering will be approximately \$70.0 million, or approximately \$80.8 million if the underwriters exercise their over-allotment option in full, assuming an initial public offering price of \$14.00 per share. We intend to use the net proceeds from this offering to continue the development and prepare for the commercialization of our Technosphere Insulin System, to expand our Technosphere Insulin System manufacturing operations and quality systems, to expand our other product development programs, to fund operations, to provide working capital and for other general corporate purposes. See "Use of proceeds."

Proposed Nasdaq National Market symbol MNKD

The number of shares of our common stock shown in the table above to be outstanding after the closing of this offering is based on approximately 26,141,513 shares of our common stock outstanding as of May 31, 2004 and excludes:

- 2,132,922 shares of our common stock issuable upon exercise of options outstanding as of May 31, 2004, with a weighted average exercise price of \$10.18 per share, of which options to purchase 790,250 shares were exercisable as of that date at a weighted average exercise price of \$11.09 per share;
- 43,366 shares of our common stock issuable upon exercise of warrants outstanding as of May 31, 2004, with a weighted average exercise price of \$50.67 per share, all of which were exercisable as of that date;
- 3,659,926 shares of our common stock reserved for future issuance under our 2004 Equity Incentive Plan effective as of the completion of this offering; and
- 2,800,000 shares of our common stock reserved for future issuance under our 2004 Non-Employee Directors' Stock Option Plan and 2004 Employee Stock Purchase Plan, which we have adopted effective upon the completion of this offering.

Unless otherwise indicated, all information in this prospectus assumes:

- a one-for-three reverse split of our common stock to be effected prior to the closing of this offering;
- the conversion, upon the closing of this offering, of all 267,212 shares of our Series A redeemable convertible preferred stock, all 192,618 shares of our Series B convertible preferred stock and all 980,392 shares of our Series C convertible preferred stock, each outstanding as of May 31, 2004, into an aggregate of 6,166,372 shares of our common stock, based on an assumed initial public offering price of \$14.00 per share; and
- that the underwriters do not exercise their option to purchase up to 825,000 shares of our common stock to cover over-allotments, if any.

Summary financial data

We were incorporated in February 1991 under the laws of the State of Delaware as Pharmaceutical Discovery Corporation, or PDC. On December 12, 2001, AlleCure Corp., or AlleCure, and CTL ImmunoTherapies Corp., or CTL, merged with wholly-owned subsidiaries of PDC. Pursuant to the merger, all of the outstanding shares of capital stock of AlleCure and CTL were exchanged for shares of capital stock of PDC, and AlleCure and CTL became wholly-owned subsidiaries of PDC. In connection with the merger, PDC changed its name to MannKind Corporation. On December 31, 2002, AlleCure and CTL merged with and into MannKind and ceased to be separate entities. For periods prior to January 1, 2002, the results of operations have been presented on a combined basis. For periods subsequent to December 31, 2001, the financial statements of MannKind and its wholly-owned subsidiaries have been presented on a consolidated basis.

The following statements of operations data for the years ended December 31, 1999 and 2000 are unaudited. The following statement of operations data for the years ended December 31, 2001, 2002 and 2003 were derived from our financial statements, which have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, and are included elsewhere in this prospectus. The balance sheet data as of March 31, 2004 and the statement of operation data for each of the three months ended March 31, 2003 and 2004 and for the period from inception (February 14, 1991) through March 31, 2004 have been derived from our unaudited financial statements, which include, in the opinion of management, all adjustments necessary to present fairly the data for such periods. The historical results are not necessarily indicative of results to be expected in any future period. See the notes to the audited financial statements included elsewhere in this prospectus for an explanation of the method used to determine the number of shares used in computing historical and pro forma basic and diluted net loss per share.

Table of Contents

The following financial data is only a summary and should be read in conjunction with our financial statements and the related notes included elsewhere in this prospectus and “Management’s discussion and analysis of financial condition and results of operations.” The following selected financial data is not intended to replace our financial statements included elsewhere in this prospectus.

Statement of operations data:	Year ended December 31,					Three months ended March 31,		Cumulative period from February 14, 1991 (date of inception) to March 31, 2004
	1999	2000	2001	2002	2003	2003	2004	
	(in thousands, except per share data)							
Revenue	\$ 74	\$ 154	\$ 326	\$ —	\$ —	\$ —	\$ —	\$ 2,858
Operating expenses:								
Research and development	3,994	20,542	19,763	42,724	45,613	11,564	12,799	156,446
General and administrative	1,654	4,854	10,629	13,215	20,699	8,807	3,769	61,226
In-process research and development costs	—	—	19,726	—	—	—	—	19,726
Goodwill impairment	—	—	—	151,428	—	—	—	151,428
Total operating expenses	5,648	25,396	50,118	207,367	66,312	20,371	16,568	388,826
Loss from operations	(5,574)	(25,242)	(49,792)	(207,367)	(66,312)	(20,371)	(16,568)	(385,968)
Other income (expense)	50	204	288	487	(25)	(51)	54	(2,142)
Interest income (expense)	(155)	379	1,261	617	459	86	105	4,744
Loss before provision for income taxes	(5,679)	(24,659)	(48,243)	(206,263)	(65,878)	(20,336)	(16,409)	(383,366)
Income taxes	—	(2)	(2)	(2)	(1)	—	—	(14)
Net loss	(5,679)	(24,661)	(48,245)	(206,265)	(65,879)	(20,336)	(16,409)	(383,380)
Deemed dividend related to beneficial conversion feature of convertible preferred stock	—	—	—	(1,421)	(1,017)	—	(612)	(3,050)
Accretion on redeemable preferred stock	—	(149)	(239)	(251)	(253)	(60)	(64)	(956)
Net loss applicable to common stockholders	\$(5,679)	\$(24,810)	\$(48,484)	\$(207,937)	\$(67,149)	\$(20,396)	\$(17,085)	\$(387,386)
Basic and diluted net loss per share:								
Historical	\$ (1.38)	\$ (3.95)	\$ (4.60)	\$ (15.43)	\$ (3.63)	\$ (1.24)	\$ (0.86)	
Pro forma(1)					\$ (3.34)		\$ (0.71)	
Shares used to compute basic and diluted net loss per share:								
Historical	4,125	6,278	10,534	13,472	18,488	16,466	19,975	
Pro forma(1)					20,107		24,218	

(1) The pro forma basic and diluted net loss per share reflects the weighted effect of the assumed conversion of convertible preferred stock at the conversion prices in effect during the periods presented. See Note 2 to our financial statements for information regarding computation of basic and diluted net loss per share and pro forma basic and diluted net loss per share.

[Table of Contents](#)

As of March 31, 2004

Balance sheet data:	Actual	Pro forma(1)	Pro forma as adjusted(2)
		(in thousands)	
Cash, cash equivalents and marketable securities	\$ 59,305	\$ 59,305	\$ 129,315
Working capital	52,586	52,586	122,596
Total assets	128,766	128,766	198,776
Deferred compensation and other liabilities	447	447	447
Redeemable convertible preferred stock	5,252	—	—
Deficit accumulated during the development stage	(383,380)	(383,380)	(383,380)
Total stockholders' equity	114,431	119,683	189,693

- (1) *Pro forma to give effect to the conversion, upon the closing of this offering, of all 267,212 shares of our Series A redeemable convertible preferred stock, all 192,618 shares of our Series B convertible preferred stock and all 980,392 shares of our Series C convertible preferred stock, each outstanding as of March 31, 2004, at an assumed initial public offering price of \$14.00 per share, into 6,166,372 shares of our common stock.*
- (2) *Pro forma as adjusted to give further effect to the sale of 5,500,000 shares we are offering pursuant to this prospectus and the receipt of the estimated net proceeds therefrom.*

Risk factors

Investing in our common stock involves a high degree of risk. You should consider carefully the risks described below and the other information in this prospectus, including the financial statements and the related notes appearing at the end of this prospectus, before deciding to invest in our common stock. If any of the following risks actually occur, they may materially harm our business and our financial condition and results of operations. In this event, the market price of our common stock could decline, and you could lose part or all of your investment.

RISKS RELATED TO OUR BUSINESS

We have a history of operating losses, we expect to continue to incur losses, and we may never become profitable.

We are a development stage company with no commercial products. All of our product candidates are still being developed, and all but our Technosphere Insulin System are still in early stages of development. Our product candidates will require significant additional development, clinical trials, regulatory clearances and additional investment before they can be commercialized. We anticipate that our Technosphere Insulin System will not be commercially available for several years, if at all.

We have never been profitable, and, as of March 31, 2004, we had an accumulated deficit of \$383.4 million and a net loss of \$65.9 million for the year ended December 31, 2003 and \$16.4 million for the three months ended March 31, 2004. The accumulated deficit has resulted principally from the write-off of goodwill, costs incurred in our research and development programs and general operating expenses. We expect to make substantial expenditures and to incur additional operating losses in the future in order to further develop and commercialize our product candidates, including costs and expenses to complete clinical trials, seek regulatory approvals and market our product candidates. This accumulated deficit may increase significantly as we expand development and clinical trial efforts. Our losses have had, and are expected to continue to have, an adverse impact on our working capital, total assets and stockholders' equity. Our ability to achieve and sustain profitability depends upon obtaining regulatory approvals for and successfully commercializing our Technosphere Insulin System, 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 be profitable even if we succeed in commercializing any of our product candidates. As a result, we cannot be sure when we will become profitable, if at all.

If we fail to raise additional capital, our financial condition and business will suffer.

It is costly to develop therapeutic products and conduct clinical trials for these products. Although we currently are focusing on our Technosphere Insulin System as our lead product candidate, we may in the future conduct clinical trials and perform preclinical research for a number of additional product candidates. Our future revenues may not be sufficient to support the expense of these activities.

Based upon our current expectations, we believe that our existing capital resources, including the proceeds of this offering, will enable us to continue planned operations into the second quarter of 2005, even if we do not enter into a collaborative agreement. However, 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. Accordingly, we expect that we will need to raise additional capital, either through a strategic business collaboration, the sale of equity and/or debt securities or the establishment of other funding facilities, in order to continue the development and commercialization of our Technosphere Insulin System and other product candidates and to support

Risk factors

our other ongoing activities. The amount of additional funds we need will depend on a number of factors, including:

- the rate of progress and costs of our clinical trials and research and development activities, including costs of procuring clinical materials and expanding our own manufacturing facilities;
- actions taken by the FDA and other regulatory authorities;
- our success in establishing strategic business collaborations;
- the timing and amount of milestone or other payments we might receive from potential third parties;
- the timing and amount of payments we might receive from potential licenses;
- the costs of discontinuing projects and technologies or decommissioning existing facilities, if we undertake those activities;
- our degree of success in commercializing our Technosphere Insulin System or our other product candidates;
- the emergence of competing technologies and products and other adverse market developments; and
- the costs of preparing, filing, prosecuting, maintaining and enforcing patent claims and other intellectual property rights or defending against claims of infringement by others.

We have raised capital in the past primarily through the private placement of equity securities. We intend to raise additional capital through strategic business collaborations. In addition, we may in the future pursue the sale of equity and/or debt securities, or the establishment of other funding facilities. Issuances of debt or additional equity could impact your rights as a holder of our common stock, may dilute your ownership percentage 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. We cannot assure you, however, that any strategic collaborations, sales of securities or sale or license 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, licensing arrangements, sales of securities and/or asset sales on a timely basis, we may be required to reduce expenses through the delay, reduction or curtailment of our projects, including our Technosphere Insulin System development activities, or further reduction of costs for facilities and administration.

We depend heavily on the successful development and commercialization of our lead product candidate, the Technosphere Insulin System, which is still under development, and our other product candidates, which are in early stages of preclinical development.

To date, we have not completed the development of any products through to commercialization. Only our Technosphere Insulin System is currently undergoing clinical trials, while our other product candidates are in research or preclinical development. We anticipate that in the near term our ability to

Risk factors

generate revenues will depend solely on the successful development and commercialization of our Technosphere Insulin System.

We have expended significant time, money and effort in the development of our lead product candidate, the Technosphere Insulin System, which has not yet received regulatory approval and which may never be commercialized. Before we can market and sell our Technosphere Insulin System, we will need to advance our Technosphere Insulin System to Phase III clinical trials and demonstrate in these trials that our Technosphere Insulin System is safe and effective. We currently anticipate conducting several pivotal Phase III clinical trials as well as several special population studies involving, in total, several thousand patients, which will require the expenditure of additional time and resources. We must also receive the necessary approvals from the FDA and similar foreign regulatory agencies before this product can be marketed in the United States or elsewhere. Even if we were to receive regulatory approval, we ultimately may be unable to gain market acceptance of our Technosphere Insulin System for a variety of reasons, including the treatment and dosage regimen, potential adverse effects, the availability of alternative treatments and cost effectiveness. If we fail to commercialize our Technosphere Insulin System, our business, financial condition and results of operations will be materially and adversely affected.

We are seeking to develop and expand our portfolio of product candidates through our internal research programs and through licensing or otherwise acquiring the rights to therapeutics in the areas of cancer and immunology. All of these product candidates will require additional research and development and significant preclinical, clinical and other testing prior to seeking regulatory approval to market them. Accordingly, these product candidates will not be commercially available for many years, if at all.

A significant portion of the research that we are conducting involves new and unproven compounds and technologies, including our Technosphere Insulin System, Technosphere formulation technology and immunotherapy product candidates. Research programs to identify new product candidates require substantial technical, financial and human resources. 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 drugs or therapeutics. 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 our Technosphere Insulin System 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.

If we fail to enter into a strategic collaboration with respect to our Technosphere Insulin System, our most clinically advanced program, we may not be able to execute on our business model.

Our current strategy for developing, manufacturing and commercializing our product candidates includes securing collaborations 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.

If we are not able to enter into collaborations for our products, we could be required to undertake and fund product development, clinical trials, manufacturing and marketing activities solely at our own expense. For example, we are currently seeking to enter into a collaboration with respect to our Technosphere Insulin System. If we are not able to enter into a collaboration prior to the commencement of Phase III clinical trials, upon successful completion of our Phase II clinical trials we

Risk factors

intend to fund the initial Phase III clinical trials ourselves from the proceeds of this offering. We estimate that the cost of a Phase III program over the next 24 to 30 months would be approximately \$70 to \$80 million. Failure to enter into a collaboration with respect to our Technosphere Insulin System following initial Phase III clinical trials or for any other product candidate would substantially increase our requirements for capital, which might not be available on favorable terms, or at all. Alternatively, we would have to substantially reduce our development efforts, which would delay or otherwise impede the commercialization of our product candidates.

If testing of a particular product candidate does not yield successful results, we will be unable to commercialize that product candidate.

Our research and development programs are designed to test the safety and efficacy of our product candidates through extensive preclinical 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 our Technosphere Insulin System or any of our other product candidates, including the following:

- safety and efficacy results obtained in our preclinical and initial clinical testing may be inconclusive or may not be predictive of results obtained in later-stage clinical trials or following long-term use and we may be forced to stop developing product candidates that we currently believe are important to our future;
- the data collected from clinical trials of our product candidates may not be sufficient to support FDA or other regulatory approval;
- after reviewing test results, 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.

The long-term safety studies of our Technosphere Insulin system are designed to evaluate a number of safety issues, including pulmonary function. Our Technosphere Insulin System is intended for multiple uses per day. Due to the size and time frame over which the clinical trials are conducted, the results of clinical trials may not be indicative of the effects of long-term use. If long-term use of our product results in adverse health effects or reduced efficacy or both, the FDA or other regulatory agencies may terminate our ability to market and sell our Technosphere Insulin System, may narrow the approved indications for use or otherwise require restrictive product labeling, or may require further clinical trials, which may be time-consuming and expensive, and may not produce favorable results.

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

If third-party payors do not reimburse customers for our products, they might not be used or purchased, which would adversely affect our revenues.

Our revenues and profitability 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 or profitability 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 healthcare reform proposals or legislation.

Risk factors

Such reforms may make it difficult to complete the development and testing of our 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. In addition, because each third-party payor individually approves reimbursement, obtaining these approvals is a time-consuming and costly process that will require us to provide scientific and clinical support for the use of each of our products to each third-party payor separately with no assurance that approval will be obtained. This process could delay the market acceptance of new products and could have a negative effect on our revenues and operating results. Even if we succeed in bringing one or more products to market, we cannot be certain that these products will be considered cost-effective or that reimbursement to the consumer will be available, in which case our business and results of operations will be harmed and the market price of our common stock may decline.

If we do not achieve our projected development goals in the timeframes we announce and expect, the commercialization of our product candidates may be delayed and our business will be harmed.

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 trials and the submission of regulatory filings. From time to time, we may publicly announce the expected timing of some of these milestones. All of these milestones are based on a variety of assumptions. The actual timing of the achievement of these milestones can vary dramatically compared to 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 trial and research and development activities;
- the receipt of approvals by our competitors and by us from the FDA and other regulatory agencies;
- other actions by regulators;
- 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 our Technosphere Insulin System;
- the costs of expanding and maintaining manufacturing operations, as necessary;
- the extent of scheduling conflicts with participating clinicians and clinical institutions; and
- our ability to identify and enroll patients who meet clinical trial eligibility criteria.

In addition, if we do not obtain sufficient additional funds through strategic collaborations, sales of securities or the sale or license of our assets on a timely basis, we may be required to reduce expenses by delaying, reducing or curtailing our Technosphere Insulin System or other product development activities, which may impact our ability to meet milestones. 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, our business and results of operations will be harmed and the market price of our common stock may decline.

Risk factors

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

We currently rely on hospitals and clinical research organizations to conduct, supervise or monitor some or all aspects of clinical trials involving our product candidates, including our Technosphere Insulin System. Further, we are seeking to enter into license agreements, partnerships or other collaborative arrangements to support financing, development and marketing of our Technosphere Insulin System. 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 trials, and the sale and marketing of our product candidates. We cannot assure you 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.

If we are unable to manage growth in connection with our transition from an early-stage development company to a company that commercializes therapeutics, our operations will suffer.

We will need to add a significant number of new personnel, broaden our areas of expertise, and expand our manufacturing capabilities in order to successfully implement our commercialization strategy for our Technosphere Insulin System. Over the next two years, we estimate that we will need to recruit at least 65 new employees, principally in the clinical development and manufacturing production areas. Organizational growth and expansion of operations could strain our existing managerial, operational, financial and other resources.

We have never manufactured any of our 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 currently use our Danbury, Connecticut facility to manufacture raw Technosphere material, formulate Technosphere Insulin, fill plastic cartridges with Technosphere Insulin and blister package the cartridges for our clinical trials. We presently intend to increase our formulation, fill and finishing capabilities at Danbury in order to accommodate our activities through initial commercialization. We are in the process of qualifying a third-party manufacturer to supply us with commercial quantities of the raw Technosphere material. We are currently negotiating a long-term supply agreement with a third party to manufacture our MedTone inhaler and the unfilled cartridges as well as the related molds.

We have never manufactured any of our product candidates in commercial quantities. As our product candidates move through the regulatory process, we will need to either develop the capability of manufacturing on a commercial scale or engage third-party manufacturers with this capability, and we cannot assure you that we will be able to do either successfully. 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. In addition, before we would be able to produce commercial quantities of Technosphere Insulin at our Danbury facility, it will have to undergo a pre-approval inspection by the FDA. The expansion process and preparation for the FDA's pre-approval inspection for commercial production at the Danbury

Risk factors

facility could take an additional six months or longer. If we use a third-party supplier to formulate Technosphere Insulin or produce its raw material, the transition could also require significant start-up time to qualify and implement the manufacturing process. If we engage a third-party manufacturer, 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 trials, regulatory submissions, required approvals or commercialization of our product candidates, entail higher costs and result in our being unable to effectively commercialize our products. Furthermore, if we or our potential third-party manufacturers fail to deliver the required commercial quantities of our products on a timely basis and at commercially reasonable prices, 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 on a timely basis, we would likely be unable to meet demand for our products and we would lose potential revenues.

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

For our Technosphere Insulin System to be commercially viable, we need access to sufficient, reliable and affordable supplies of insulin, our MedTone inhaler, the related cartridges and other materials. We currently have a long-term supply agreement with Diosynth B.V., an independent supplier of insulin, which is currently our sole supplier for insulin. We are aware of at least five other suppliers of bulk insulin. We are currently negotiating a long-term supply agreement with the supplier of our MedTone inhaler and cartridges. We must rely on our suppliers to comply with relevant regulatory and other legal requirements, including the production of insulin in accordance with current Good Manufacturing Practices, or cGMP. The supply of all of these materials may be limited or the manufacturer may not meet relevant regulatory requirements, and if we are unable to obtain these materials in sufficient amounts, in a timely manner and at reasonable prices, or if we should encounter delays or difficulties in our relationships with manufacturers or suppliers, our development or manufacturing may be delayed. Any such events would delay the submission of our product candidates for regulatory approval or market introduction and subsequent sales and, if so, our business and results of operations will be harmed and the market price of our common stock may decline.

If we fail to enter into collaborations with third parties, we will be required to establish our own sales, marketing and distribution capabilities, which could delay the commercialization of our products and harm our business.

A broad base of physicians and specialists treat patients with diabetes. A large sales force will be required in order to educate and support these physicians and specialists. Therefore, we plan to enter into collaborations with one or more pharmaceutical companies to sell, market and distribute our Technosphere Insulin System. If we fail to enter into collaborations, we will be required to establish our own direct sales, marketing and distribution capabilities. Establishing these capabilities can be time-consuming and expensive and we estimate that establishing a specialty sales force would cost more than \$20 million. Because of our size, we would be at a disadvantage to our potential competitors, all of which have collaborated with large pharmaceutical companies that have substantially more resources than we do. As a result, we would not initially be able to field a sales force as large as our competitors or provide the same degree of market research or marketing support. In addition, our competitors would have a greater ability to devote research resources toward expansion of the indications for their products. 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.

Risk factors

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.

We initially are focusing on the development of the Technosphere Insulin System for the treatment of diabetes, and we face intense competition in this area. Pfizer, Inc. and Aventis, in collaboration with Nektar Therapeutics, have been conducting Phase III clinical trials for the Exubera product and in March 2004 filed a submission seeking regulatory approval in Europe. Novo Nordisk A.S., in collaboration with Aradigm Corporation, has a pulmonary insulin product in Phase III clinical trials, and Eli Lilly and Company, in collaboration with Alkermes, Inc., is also developing a pulmonary insulin product, which is currently in Phase II clinical trials. In addition, a number of established pharmaceutical companies are developing proprietary technologies or have entered into arrangements with, or acquired, companies with technologies for the treatment of diabetes. We also face substantial competition for the development of our other product candidates. See “Business— Competition.”

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.

The rapid rate of scientific discoveries and technological changes could result in one or more of our products becoming obsolete or noncompetitive. Our competitors may develop or introduce new products that would render our technology and our Technosphere Insulin System less competitive, uneconomical or obsolete. The fact that another company will likely be the first to commercialize a pulmonary insulin system may give that company an advantage in terms of being able to gain reputation and market share as well as set parameters for the pulmonary insulin market such as pricing. Our future success will depend not only on our ability to develop our products but to improve them and to keep pace with emerging industry developments. We cannot assure you that we will be able to do so.

We also expect to face increasing 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, cancer and inflammatory and autoimmune diseases. 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 our products do not become widely accepted by physicians, patients, third-party payors and the healthcare community, we may be unable to generate significant revenue, if any.

Our product candidates are new and unproven. Even if our product candidates obtain regulatory approvals, 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 our product candidates will depend on many factors, including:

- the willingness and ability of patients and the healthcare community to adopt new technologies;
- the ability to manufacture the product in sufficient quantities with acceptable quality and at an acceptable cost;
- the perception of patients and the healthcare community, including third-party payors, regarding the safety, efficacy and benefits of the product compared to those of competing products or therapies;
- the convenience and ease of administration of the products relative to existing treatment methods;

Risk factors

- the pricing and reimbursement of our products relative to existing treatment therapeutics and methods; and
- marketing and distribution support for our products.

Physicians will not recommend our products until clinical data or other factors demonstrate the safety and efficacy of our products as compared to other treatments. Even if the clinical safety and efficacy of our product candidates is established, physicians may elect not to recommend these product candidates for a variety of factors, including the reimbursement policies of government and third-party payors and the effectiveness of our competitors in marketing their therapies. Because of these and other factors, our products may not gain market acceptance, which would materially harm our business, financial condition and results of operations.

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 our various product candidates, including the Technosphere Insulin System, 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 trial volunteers and loss of revenues. We may not be able to obtain insurance coverage that will be adequate to satisfy any liability that may arise. 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, we may not have sufficient financial resources to complete development or commercialization of any of our product candidates and, if so, our business and results of operations will be harmed and the market price of our common stock may decline.

We currently carry global liability insurance in the amount of \$5 million in the United States and \$5 million in Europe. We believe these limits are reasonable to cover us from potential damages arising from current and previous clinical trials of our Technosphere Insulin System. In addition, we carry local policies per trial in each European country in which we conduct clinical trials. We intend to obtain product liability coverage for commercial sales in the future. However, insurance coverage in our industry can be very expensive and difficult to obtain and we cannot assure you that we will be able to obtain sufficient coverage at an acceptable cost, if at all. If we are sued for any injury caused by our technology or products, or by third-party products that we manufacture, our liability could exceed our insurance coverage and total assets.

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, radioactive and biological materials. In addition, our manufacturing operations involve the use of CBZ-lysine, which is stable and non-hazardous under normal storage conditions, but 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 governing how we use, manufacture, store, handle and dispose of these materials. 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 million per occurrence/\$2 million in the aggregate and is supplemented by an umbrella policy that provides a further \$4 million of coverage; however, our insurance policy excludes pollution 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

Risk factors

future. Finally, current or future environmental laws and regulations may impair our research, development or production efforts.

When we purchased the facilities located in Danbury, Connecticut, there was a soil cleanup plan in process. As part of the purchase, we obtained an indemnification from the seller related to the remediation of the soil for all known environmental conditions that existed at the time the seller acquired the property. The seller is, in turn, indemnified for these known environmental conditions by the previous owner. We also received an indemnification from the seller for environmental conditions created during its ownership of the property and for environmental problems unknown at the time that the seller acquired the property. These latter indemnities are limited to the purchase price that we paid for the Danbury facilities. We estimate the cost to complete the soil cleanup plan is \$500,000 to \$1,500,000 over the next 18 to 24 months. In the event that any cleanup costs are imposed on us and we are unable to collect the full amount of these costs and expenses from the seller or the party responsible for the contamination, we may be required to pay these costs and our business and results of operations may be harmed.

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

In order to commercialize our product candidates successfully, we will be required to expand our work force, particularly in the areas of manufacturing, clinical trials management, regulatory affairs, business development, and sales and marketing. These activities will require the addition of new personnel, including management, and the development of additional expertise by existing personnel. 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.

The loss of the services of any principal member of our management and scientific staff, including Messrs. Mann, Edstrom, Burns and Anderson and Drs. Cheatham and Thomson, 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 Chief Executive Officer is unable 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 also serving as the Chairman and Co-Chief Executive Officer of Advanced Bionics Corporation, which has entered into an agreement to be acquired by Boston Scientific Corporation, and 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 be able to expend the same time or focus on our activities as other, similarly situated

Risk factors

chief executive officers. Mr. Mann typically devotes anywhere between 25 and 50 hours a week to our business. 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.

Our facilities that are located in Southern California may be affected by natural disasters.

Our headquarters and some of our research and development activities are located in Southern California, where they are subject to an enhanced risk of natural and other disasters such as power and telecommunications failures, fires and earthquakes. A fire, earthquake or other catastrophic loss that causes significant damage to our facilities or interruption of our business could harm our business. We do not carry insurance to cover losses caused by earthquakes, and the insurance coverage that we carry for fire damage and for business interruption may be insufficient to compensate us for any losses that we may incur.

RISKS RELATED TO REGULATORY APPROVALS

Our product candidates must undergo rigorous preclinical and clinical testing and regulatory approvals, which could be costly and time-consuming and 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 our Technosphere Insulin System, 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 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 expect, based on our interactions with the FDA and on our understanding of the interactions between the FDA and other pharmaceutical companies developing pulmonary insulin delivery systems, that we will need safety data covering at least two years from patients treated with our Technosphere Insulin System and that we must conduct a two-year carcinogenicity study of Technosphere Insulin in rodents. We cannot be certain when or under what conditions we will undertake further clinical trials, including a Phase III program for our Technosphere Insulin System. The clinical trials of our product candidates may not be completed on schedule, and 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 trials may not be sufficient to support regulatory approval of our various product candidates, including our Technosphere Insulin System. Even if we believe the data collected from our clinical trials 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.

Risk factors

The requirements governing the conduct of clinical trials and manufacturing and marketing of our product candidates, including our Technosphere Insulin System, 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 trial designs. Foreign regulatory approval processes include 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. To our knowledge, no pulmonary insulin product has yet been approved for marketing and we are not aware of any precedent for the successful commercialization of products based on our technology or technologies similar to ours. The FDA likely will regulate our Technosphere Insulin System as a “combination product” because of the complex nature of the system that includes the combination of a new drug (Technosphere Insulin) and a new medical device (the MedTone inhaler used to administer the insulin). There have been some indications from the FDA that the review of a future marketing application for our Technosphere Insulin System will involve three separate review groups of the FDA: (1) the Metabolic and Endocrine Drug Products Division; (2) the Pulmonary Drug Products Division; and (3) the Center for Devices and Radiological Health within the FDA that reviews medical devices. We currently understand that the Metabolic and Endocrine Drug Products Division will be the lead group and will obtain consulting reviews from the other two FDA groups. The FDA has not made an official final decision in this regard, however, and we can make no assurances at this time about what impact FDA review by multiple groups will have on the review and approval of our product or whether we are correct in our understanding of how the Technosphere Insulin System will be reviewed.

FDA review of our Technosphere Insulin System as a combination-product therapy may lengthen the product development and regulatory approval process, increase our development costs and delay or prevent the commercialization of our Technosphere Insulin System.

We are developing our Technosphere Insulin System as a new treatment for diabetes utilizing unique, proprietary components. The FDA advised us that the Technosphere Insulin System must be tested as an entire system and that changes to either the MedTone inhaler, the Technosphere material or the insulin could result in FDA requirements to repeat clinical studies because the agency will not permit bridging studies. Bridging studies are traditionally performed on investigational medical products to demonstrate relevance of data obtained on older generation products to newer changed products. Our product candidates that are currently in development for the treatment of cancer and autoimmune and inflammatory diseases also 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 our Technosphere Insulin System and other product candidates until we have obtained regulatory approval, and any delay in obtaining, or inability to obtain, regulatory approval could harm our business. In addition, regulatory authorities may also limit the segments of the diabetes population to which we or others may market our Technosphere Insulin System or limit the target population for our other product candidates.

Risk factors

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 trials. 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 trials, 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, we will be subject to stringent, ongoing government regulation.

Even if regulatory authorities approve any of our product candidates, the manufacture, marketing and sale of these product candidates will be subject to stringent and ongoing government regulation. We also are required to register our establishments 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 pre-approval 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), establishment registration, device listing, 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 insulin supplier does not yet supply human recombinant insulin for an FDA-approved product and will likely be subject to an FDA preapproval inspection before the agency will approve a future marketing application for our Technosphere Insulin System.

We can make no assurances that our insulin supplier will be acceptable to the FDA. If we were required to find a new or additional supplier of insulin, we would be required to evaluate the new supplier's ability to provide insulin that meets our specifications and quality requirements, which would require significant time and expense and could delay the manufacturing and future commercialization of our Technosphere Insulin System. We also depend on suppliers for other materials that comprise our Technosphere Insulin System, including our MedTone inhaler and cartridges. We must rely on our MedTone inhaler and cartridge supplier to comply with relevant regulatory requirements including Quality System Regulations, or QSR, and other FDA requirements for medical device manufacturers. It also is likely that this supplier will be subject to an FDA preapproval inspection before the agency will approve a future marketing application for our

Risk factors

Technosphere Insulin System. At the present time our supplier is certified to the ISO9001:2000 Standard. There can be no assurance, however, that if the FDA were to conduct a preapproval inspection of our supplier, that the agency would find that the supplier substantially complies with the QSR. If we or any potential third-party manufacturer or supplier fail to comply with these cGMP or QSR requirements, regulatory authorities may subject us to regulatory action, including criminal prosecutions, fines and suspension of the manufacture of our products.

Any regulatory approvals that we receive for our product candidates may also be subject to limitations on the indicated uses for which the product candidate may be marketed or contain requirements for potentially costly post-marketing follow-up clinical trials.

Reports of side effects or safety concerns in related technology fields or in other companies' clinical trials 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 trials being conducted by other pharmaceutical companies involving insulin delivery systems. The announcement of adverse results from these clinical trials, particularly trials involving the pulmonary delivery of insulin, as well as the FDA's response to these clinical trials, could negatively impact the timing of our clinical trials, our ability to obtain regulatory approval or the public perception of our products. For example, in 2001, Pfizer and Aventis announced that the planned filing for regulatory approval of their pulmonary insulin product would be delayed, citing two concerns. The first concern was that one patient out of more than 1,000 that had used the inhaled form of insulin had developed pulmonary fibrosis. The incidence of pulmonary fibrosis seen in their Phase III clinical trials was comparable to the general population incidence, so it was unclear that the pulmonary fibrosis was related to the use of inhaled insulin. However, the use of inhaled insulin could not be ruled out as a cause. The second concern was that four times as many patients inhaling their drug developed antibodies against insulin as those who injected insulin, although these antibodies did not appear to inhibit insulin activity. Because of these concerns, Pfizer and Aventis stated that the FDA would likely require more safety data. To date, they have filed for regulatory approval in Europe (in March 2004), but have not filed for regulatory approval in the United States. A review of this long-term safety data by the FDA may result in delays in approvals of any inhaled insulin product, including our Technosphere Insulin System. There are also a number of clinical trials 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 trials 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, know-how 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 similar technologies.

Risk factors

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 if we attempt to enforce them and they are challenged in court or in other proceedings, such as oppositions, which may be brought in US or foreign jurisdictions to challenge the validity of a patent. A third party may challenge the validity or enforceability of a patent after its issuance by the US Patent and Trademark Office, or USPTO.

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 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. 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. Litigation 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 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.

Over the past three decades the number of patents issued to biotechnology companies has expanded dramatically. 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 a patent and the courts do not always arrive at uniform conclusions.

Risk factors

A third party may claim that we are using inventions covered by such third party's patents and may go to court to stop us from engaging in our normal operations and activities. These 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), be required to obtain a license from the other party in order to continue to commercialize the affected products, or design our products in any 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.

Although we own a number of domestic and foreign patents and patent applications relating to our Technosphere Insulin System and cancer vaccine products under development, we have identified certain third-party patents that a court may interpret to restrict our freedom to operate (that is, to cover our products) in the areas of Technosphere formulations, pulmonary insulin delivery and the treatment of cancer. Specifically, we have identified certain third-party patents having claims relating to chemical compositions of matter and pulmonary insulin delivery that may trigger an allegation of infringement upon the commercial manufacture and sale of our Technosphere Insulin System. We have also identified third-party patents disclosing methods of use and compositions of matter related to DNA-based vaccines that also may trigger an allegation of infringement upon the commercial manufacture and sale of our cancer therapy. If a court were to determine that our insulin products or cancer therapies were 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 an 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.

Patent litigation is costly and time-consuming. Among other things, such 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. Although patent and intellectual property disputes in the pharmaceutical area have often been settled for licensing or similar arrangements, associated costs may be substantial and could include ongoing royalties. 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

Risk factors

operations and cause the market price of our common stock to decline. See “Business— Intellectual Property and Proprietary Technology.”

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

We have not selected trade names for some of our products and product candidates; therefore, we have not filed trademark registrations for our potential trade names for those products in any jurisdiction, including the United States. Although we intend to defend any opposition to our trademark registrations, no assurance can be given that any of our trademarks will be registered in the United States or elsewhere or 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 THIS OFFERING

Our stock price may be volatile and, as a result, you could lose some or all of your investment.

Following this offering, the market price for our common stock is likely to be volatile, in part because our shares have not been traded publicly. In addition, there has been a history of significant volatility in the market prices of securities of biotechnology and biopharmaceutical companies. 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 trials;
- announcements by us or our competitors concerning their clinical trial results, acquisitions, strategic alliances, technological innovations and new approved commercial products;
- the availability of critical materials used in developing and manufacturing our Technosphere Insulin System or other product candidates;
- developments concerning our patents, proprietary rights and potential infringement claims;
- the expense and time associated with, and the extent of our ultimate success in, securing regulatory approvals;
- changes in securities analysts’ estimates of our financial and operating performance;
- sales of large blocks of our common stock, including sales by our executive officers, directors and significant stockholders; and
- discussion of our Technosphere Insulin System, 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.

Any of these risks, as well as other factors, could cause the market price of our common stock to decline and may result in a loss of some or all of your investment.

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 National 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

Risk factors

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.

Alfred E. Mann, our Chairman, 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.

Mr. Mann has been our primary source of financing to date. As of May 31, 2004, Mr. Mann owned or controlled approximately 61.8% of our outstanding shares of capital stock and will own or control approximately 50.2% of our outstanding shares of common stock immediately following this offering. By virtue of his holdings, he is and will be able to individually elect the members of our board of directors, control our management and 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 stockholders may view as unfavorable.

Subject to compliance with federal and state securities laws, Mr. Mann is free to sell the shares of our stock he holds at any time following the expiration of his lock-up agreement with the underwriters. 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 Institute at the University of Southern California, 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, four of his children and Dr. Joseph Schulman, the director of AMF. The AEMFBE is a membership foundation consisting of five members, including Mr. Mann and the same four 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.

Mr. Mann has agreed to certain provisions regarding the disposition of his shares, including a prohibition on the sale of his shares for a period of 180 days following the date of this prospectus. See "Underwriting."

You should not consider Mr. Mann's other businesses in deciding whether to purchase our stock.

Mr. Mann has been and continues to be involved in the formation, financing and operation of many businesses unrelated to our business. These businesses have included, among others, Advanced Bionics Corporation, a company focused on the development of cochlear implants that has entered into an agreement to be acquired by Boston Scientific Corporation; Second Sight LLC, a privately held company developing a visual prosthesis to restore a degree of sight to the blind; MiniMed, Inc., a

Risk factors

company focused on diabetes therapy and microinfusion drug delivery that was acquired by Medtronic, Inc. in 2001; Medical Research Group, Inc., a company involved in the development of an artificial pancreas that was also acquired by Medtronic, Inc. in 2001; and Pacesetter Systems and its successor, Siemens Pacesetter, a manufacturer of cardiac pacemakers that is now part of St. Jude Medical. Mr. Mann is also involved in numerous charitable organizations. You should not consider any of these businesses or activities and should only rely on the information provided in this prospectus in deciding whether or not to purchase our stock.

The future sale of our common stock could negatively affect our stock price.

After this offering, we will have approximately 31.6 million shares of common stock outstanding, or 32.5 million shares if the underwriters exercise their over-allotment option in full. The shares sold in this offering will be freely tradable without restriction under the federal securities laws unless purchased by our affiliates. The remaining shares of common stock outstanding after this offering will be available for public sale subject in some cases to volume and other limitations. See “Shares eligible for future sale.” Substantially all of our shares outstanding after this offering (excluding the shares sold in this offering) will be subject to the lock-up agreements with the underwriters described under “Underwriting.”

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. After this offering, the holders of approximately 890,706 shares of our common stock and the holders of warrants to purchase 43,366 shares of our common stock will have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. Furthermore, if we were to include in a company-initiated registration statement shares held by those holders pursuant to the exercise of their registrations 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, the market price of our common stock may decline and our existing stockholders may experience significant dilution.

If an active, liquid trading market for our common stock does not develop, you may be unable to sell your shares quickly or at the market price.

Prior to this offering, there was no public market for our common stock. An active trading market for our common stock may not develop following this offering. As a result, you may not be able to sell your shares quickly or at the market price if trading in our stock is not active. The initial public offering price may not be indicative of prices that will prevail in the trading market. See “Underwriting” for more information regarding the factors considered in determining the initial public offering price.

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.

Our amended and restated certificate of incorporation and bylaws include anti-takeover 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, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibits stockholders owning in excess of 15% of our outstanding voting stock from merging or combining with us. These provisions may delay or prevent an acquisition of us, even if the acquisition may be

Risk factors

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. See “Description of capital stock— Amended and restated certificate of incorporation and bylaw provisions.”

If we do not effectively use our broad discretion in how we use the proceeds of this offering, our results of operations could suffer and the value of our stock could decline.

Our management will have considerable discretion in the application of the net proceeds of this offering. We have not finalized how we will use these proceeds. We may use the net proceeds for corporate purposes that do not yield a significant return or any return at all for our stockholders. See “Use of proceeds.”

As a new investor, you will incur substantial dilution as a result of this offering, and as a result, the market price of our common stock may decline.

The historical net tangible book value of our common stock as of March 31, 2004 was approximately \$119.7 million, or approximately \$5.99 per share, based on 19,975,141 of shares outstanding as of March 31, 2004. We expect the initial public offering price to be substantially higher than \$5.99 per share. Therefore, if you purchase shares of our common stock in this offering at an assumed price of \$14.00 per share, you will incur immediate and substantial dilution in net tangible book value of \$8.00 per share, representing the difference between our pro forma net tangible book value per share after giving effect to this offering and the assumed initial public offering price. You may incur additional dilution if the holders of outstanding options or warrants exercise those options or warrants. All purchasers of shares in this offering will contribute 19% of the total amount of the purchase price that has been paid by all stockholders but will own only 17% of shares outstanding after the offering. Additional information regarding the dilution to investors in this offering is included in this prospectus under the heading “Dilution.”

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 in value after the offering or even maintain the price at which you purchased your shares, and you may not realize a return on your investment in our common stock.

Special note regarding forward-looking statements

This prospectus contains forward-looking statements. The forward-looking statements are contained principally in, but not limited to, the sections entitled “Risk factors,” “Management’s discussion and analysis of financial condition and results of operations” and “Business.” These statements involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- the progress or success of our research, development and clinical programs, the timing of completion of enrollment in our clinical trials, the timing of the interim analyses and the timing or success of the commercialization of our Technosphere Insulin System, or any other products or therapies that we may develop;
- our ability to market, commercialize and achieve market acceptance for our Technosphere Insulin System, 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; and
- our estimates regarding anticipated operating losses, future revenues, capital requirements and our needs for additional financing.

In some cases, you can identify forward-looking statements by terms such as “anticipates,” “believes,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “potential,” “predicts,” “projects,” “should,” “will,” “would” and similar expressions intended to identify forward-looking statements. Forward-looking statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. We discuss many of these risks in this prospectus in greater detail under the heading “Risk factors.” Given these uncertainties, you should not place undue reliance on these forward-looking statements. Also, forward-looking statements represent our estimates and assumptions only as of the date of this prospectus. You should read this prospectus and the documents that we reference in this prospectus and have filed as exhibits to the registration statement of which this prospectus forms a part completely and with the understanding that our actual future results may be materially different from what we expect.

Except as required by law, we do not undertake any obligation to update or revise any forward-looking statements contained in this prospectus or incorporated herein by reference, whether as a result of new information, future events or otherwise. Because of these risks and uncertainties, the forward-looking events and circumstances discussed in this prospectus may not transpire. Factors that could cause actual results or conditions to differ from those anticipated by these and other forward-looking statements include those described in the “Risk factors” section and elsewhere in this prospectus.

Use of proceeds

We estimate that we will receive net proceeds from the sale of shares of our common stock in this offering of approximately \$70.0 million (\$80.8 million if the underwriters exercise their over-allotment option in full), based upon an assumed initial public offering price of \$14.00 per share and after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

We estimate that we will use approximately \$50 million of the net proceeds of this offering to continue the development of our Technosphere Insulin System, including the continuation of our clinical trial program, and to develop additional applications for our proprietary Technosphere formulation technology. We expect, with these proceeds, to complete Phase II trials on Technosphere Insulin and initiate a Phase III clinical trial. Additionally, our efforts with respect to our Technosphere Insulin System will include expansion of our manufacturing operations and quality systems.

We estimate that we will use approximately \$10 million of the net proceeds of this offering to expand our other product development programs, specifically developing therapies for the treatment of solid-tumor cancers and a variety of inflammatory and autoimmune diseases. We expect to begin preclinical safety tests for a cancer product candidate later this year, with the goal of commencing clinical trials in 2005.

We intend to use the balance of the net proceeds of this offering to fund operations, to provide working capital and for other general corporate purposes, which may include in-licensing or acquiring additional technologies. We have no current plans, agreements or commitments with respect to any future acquisitions or in-licensing, and we are not currently engaged in any negotiations with respect to any transactions of that nature.

As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering. Accordingly, our management will have broad discretion in the application of the net proceeds, and investors will be relying on the judgment of our management regarding the application of the proceeds of this offering. Pending these uses, we plan to invest the net proceeds in short-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the United States. The goal with respect to the investment of these net proceeds is capital preservation and liquidity so that funds are readily available to fund our research and development operations. On December 12, 2003, our board of directors adopted our written investment policy. The investment policy imposes restrictions on our investments in order to ensure that we preserve our principal and maintain our liquidity. Any investment of the net proceeds from this offering will be made in accordance with the terms of our investment policy.

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.

Capitalization

The following table sets forth our capitalization as of March 31, 2004:

- on an actual basis;
- on a pro forma basis to give effect to the conversion, upon the closing of this offering, of all 267,212 shares of our Series A redeemable convertible preferred stock, all 192,618 shares of our Series B convertible preferred stock and all 980,392 shares of our Series C convertible preferred stock each outstanding as of March 31, 2004, based on an assumed initial public offering price of \$14.00 per share, into an aggregate of 6,166,372 shares of our common stock; and
- on a pro forma as adjusted basis to give further effect to the sale in this offering of 5,500,000 shares of our common stock at an assumed initial public offering price of \$14.00 per share and the receipt of the estimated net proceeds therefrom, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

	As of March 31, 2004		
	Actual	Pro forma	Pro forma as adjusted
	(in thousands, except share and per share data)		
Cash, cash equivalents and marketable securities	\$59,305	\$59,305	\$ 129,315
Deferred compensation and other liabilities	447	447	447
Series A redeemable convertible preferred stock, \$0.01 par value per share; 267,213 shares authorized; 267,212 issued and outstanding, actual; no shares issued and outstanding, pro forma or pro forma as adjusted	5,252	—	—
Stockholders' equity:			
Series B convertible preferred stock, \$0.01 par value per share; 192,618 shares authorized, issued and outstanding, actual; no shares issued and outstanding, pro forma or pro forma as adjusted	15,000	—	—
Series C convertible preferred stock, \$0.01 par value per share; 980,393 authorized; 980,392 issued and outstanding actual; no shares issued and outstanding, pro forma or pro forma adjusted	50,000	—	—
Common stock, \$0.01 par value per share; 100,000,000 shares authorized; 19,975,141 shares issued and outstanding, actual; 26,141,513 and 31,641,513 shares issued and outstanding, pro forma and pro forma as adjusted, respectively	200	261	316
Additional paid-in capital	434,202	504,393	574,348
Notes receivable from stockholders	(1,438)	(1,438)	(1,438)
Notes receivable from officers	(153)	(153)	(153)
Deficit accumulated during the development stage	(383,380)	(383,380)	(383,380)
Total stockholders' equity	114,431	119,683	189,693
Total capitalization	\$120,130	\$120,130	\$ 190,140

Capitalization

You should read the information in the table above in conjunction with “Management’s discussion and analysis of financial condition and results of operations” and our financial statements and accompanying notes appearing elsewhere in this prospectus.

The number of shares in the table above excludes:

- 2,149,953 shares of our common stock issuable upon exercise of options outstanding as of March 31, 2004, with a weighted average exercise price of \$10.20 per share, of which options to purchase 765,464 shares were exercisable as of that date, with a weighted average exercise price of \$10.74 per share;
- 43,366 shares of our common stock issuable upon exercise of warrants outstanding as of March 31, 2004, with a weighted average exercise price of \$50.67 per share, all of which were exercisable as of that date;
- 3,643,957 shares of our common stock reserved for future issuance under our 2004 Equity Incentive Plan effective as of the completion of this offering; and
- 2,800,000 shares of our common stock reserved for future issuance under our 2004 Non-Employee Directors’ Stock Option Plan and 2004 Employee Stock Purchase Plan, which we have adopted effective upon the completion of this offering.

We expect to effect a one-for-three reverse split of our common stock prior to the closing of this offering. All share amounts set forth in the table above have been adjusted to give effect to this stock split.

Dilution

Our historical net tangible book value as of March 31, 2004 was approximately \$119.7 million, or \$5.99 per share of common stock, based on 19,975,141 shares of common stock outstanding. Historical net tangible book value per share is equal to our total tangible assets minus total liabilities, all divided by the number of shares of our common stock outstanding as of March 31, 2004. Our pro forma net tangible book value as of March 31, 2004 was approximately \$119.7 million, or \$4.58 per share of our common stock. Pro forma net tangible book value per share gives effect to the conversion, upon the closing of this offering, of all then outstanding shares of our preferred stock, based on an assumed initial public offering price of \$14.00 per share, into an aggregate of 6,166,372 shares of our common stock.

After giving further effect to the sale of the 5,500,000 shares of our common stock offered by this prospectus at an assumed initial public offering price of \$14.00 per share, and after deducting underwriting discounts and commissions and our estimated offering expenses, our pro forma as adjusted net tangible book value as of March 31, 2004 would have been approximately \$189.7 million, or \$6.00 per share of our common stock. This represents an immediate increase in pro forma net tangible book value of \$1.42 per share to existing stockholders and an immediate dilution of \$8.00 per share to new investors. The following table illustrates this calculation on a per share basis:

Assumed initial public offering price per share		\$14.00
Net tangible book value per share as of March 31, 2004	\$ 5.99	
Decrease per share attributable to the conversion of our convertible preferred stock and redeemable convertible preferred stock	(1.41)	
Pro forma net tangible book value as of March 31, 2004	4.58	
Increase per share attributable to the offering	1.42	
Pro forma as adjusted net tangible book value per share after this offering		6.00
Dilution per share to new investors		\$ 8.00

If the underwriters exercise their over-allotment option in full, pro forma as adjusted net tangible book value will increase to \$6.17 per share, representing an increase to existing stockholders of \$1.59 per share, and there will be an immediate dilution of \$7.83 per share to new investors.

The following table summarizes, on a pro forma as adjusted basis as of March 31, 2004, after giving effect to this offering and the conversion upon the closing of this offering of all of our shares of convertible preferred stock and redeemable convertible preferred stock outstanding as of that date, the total number of shares of our common stock purchased from us and the total consideration and average price per share paid by existing stockholders and by new investors:

	Total shares		Total consideration		Average price per share
	Number	%	Amount	%	
Existing stockholders	26,141,513	83%	\$328,500,000	81%	\$12.57
New investors	5,500,000	17	77,000,000	19	14.00
Total	31,641,513	100%	\$405,500,000	100%	

Dilution

If the underwriters exercise their over-allotment option in full, the following will occur:

- the pro forma as adjusted percentage of shares of our common stock held by existing stockholders will decrease to approximately 81% of the pro forma as adjusted total number of shares of our common stock outstanding immediately after this offering; and
- the pro forma as adjusted number of shares of our common stock held by new investors will increase to 6,325,000, or approximately 19% of the total pro forma as adjusted number of shares of our common stock outstanding immediately after this offering.

The tables and calculations above are based on 26,141,513 shares of our common stock outstanding as of March 31, 2004 and exclude:

- 2,149,953 shares of our common stock issuable upon exercise of options outstanding as of March 31, 2004, with a weighted average exercise price of \$10.20 per share, of which options to purchase 765,464 shares were exercisable as of that date, with a weighted average exercise price of \$10.74 per share;
 - 43,366 shares of our common stock issuable upon exercise of warrants outstanding as of March 31, 2004, with a weighted average exercise price of \$50.67 per share, all of which were exercisable as of that date;
 - 3,643,957 shares of our common stock reserved for future issuance under our 2004 Equity Incentive Plan effective as of the completion of this offering; and
 - 2,800,000 shares of our common stock reserved for future issuance under our 2004 Non-Employee Directors' Stock Option Plan and 2004 Employee Stock Purchase Plan, which we have adopted effective upon the completion of this offering.
-

Selected financial data

We were incorporated in February 1991 under the laws of the State of Delaware as Pharmaceutical Discovery Corporation, or PDC. On December 12, 2001, AlleCure and CTL merged with wholly-owned subsidiaries of PDC. Pursuant to the merger, all of the outstanding shares of capital stock of AlleCure and CTL were exchanged for shares of capital stock of PDC, and AlleCure and CTL became wholly-owned subsidiaries of PDC. In connection with the merger, PDC changed its name to MannKind Corporation. On December 31, 2002, AlleCure and CTL merged with and into MannKind and ceased to be separate entities. For periods prior to January 1, 2002, the results of operations have been presented on a combined basis. For periods subsequent to December 31, 2001, the financial statements of MannKind and its wholly-owned subsidiaries have been presented on a consolidated basis.

The following statement of operations data for the years ended December 31, 1999 and 2000 and the balance sheet data as of December 31, 1999 and 2000 are unaudited. The following statement of operations data for the years ended December 31, 2001, 2002 and 2003 and the balance sheet data as of December 31, 2001, 2002 and 2003, are derived from our audited financial statements. The statement of operations data for each of the three years in the period ended December 31, 2003 and the balance sheet data at December 31, 2002 and 2003 were derived from our financial statements, which have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, and are included elsewhere in this prospectus. The balance sheet data at December 31, 2001 were derived from our financial statements, which have been audited by Deloitte & Touche LLP and are not included in this prospectus. The balance sheet data as of March 31, 2004 and the statement of operation data for each of the three months ended March 31, 2003 and 2004 and for the period from inception (February 14, 1991) through March 31, 2004 have been derived from our unaudited financial statements, which include, in the opinion of management, all adjustments necessary to present fairly the data for such periods. The historical results are not necessarily indicative of results to be expected in any future period. See the notes to the audited financial statements included elsewhere in this prospectus for an explanation of the method used to determine the number of shares used in computing historical and pro forma basic and diluted net loss per share.

Selected financial data

The following financial data is only a summary and should be read in conjunction with our financial statements and the related notes included elsewhere in this prospectus, and “Management’s discussion and analysis of financial condition and results of operations.” The following selected financial data is not intended to replace our financial statements included elsewhere in this prospectus.

Statement of operations data:	Year ended December 31,					Three months ended March 31,		Cumulative period from February 14, 1991 (date of inception) to March 31, 2004
	1999	2000	2001	2002	2003	2003	2004	
	(in thousands, except per share data)							
Revenue	\$ 74	\$ 154	\$ 326	\$ —	\$ —	\$ —	\$ —	\$ 2,858
Operating expenses:								
Research and development	3,994	20,542	19,763	42,724	45,613	11,564	12,799	156,446
General and administrative	1,654	4,854	10,629	13,215	20,699	8,807	3,769	61,226
In-process research and development costs	—	—	19,726	—	—	—	—	19,726
Goodwill impairment	—	—	—	151,428	—	—	—	151,428
Total operating expenses	5,648	25,396	50,118	207,367	66,312	20,371	16,568	388,826
Loss from operations	(5,574)	(25,242)	(49,792)	(207,367)	(66,312)	(20,371)	(16,568)	(385,968)
Other income (expense)	50	204	288	487	(25)	(51)	54	(2,142)
Interest income (expense)	(155)	379	1,261	617	459	86	105	4,744
Loss before provision for income taxes	(5,679)	(24,659)	(48,243)	(206,263)	(65,878)	(20,336)	(16,409)	(383,366)
Income taxes	—	(2)	(2)	(2)	(1)	—	—	(14)
Net loss	(5,679)	(24,661)	(48,245)	(206,265)	(65,879)	(20,336)	(16,409)	(383,380)
Deemed dividend related to beneficial conversion of convertible preferred stock	—	—	—	(1,421)	(1,017)	—	(612)	(3,050)
Accretion on redeemable preferred stock	—	(149)	(239)	(251)	(253)	(60)	(64)	(956)
Net loss applicable to common stockholders	\$(5,679)	\$(24,810)	\$(48,484)	\$(207,937)	\$(67,149)	\$(20,396)	\$(17,085)	\$(387,386)
Basic and diluted net loss per share:								
Historical	\$ (1.38)	\$ (3.95)	\$ (4.60)	\$ (15.43)	\$ (3.63)	\$ (1.24)	\$ (0.86)	
Pro forma(1)					\$ (3.34)		\$ (0.71)	
Shares used to compute basic and diluted net loss per share:								
Historical	4,125	6,278	10,534	13,472	18,488	16,466	19,975	
Pro forma(1)					20,107		24,218	

(1) The pro forma basic and diluted net loss per share reflects the weighted effect of the assumed conversion of convertible preferred stock at the conversion prices in effect during the periods presented. See Note 2 to our financial statements for information regarding computation of basic and diluted net loss per share and pro forma basic and diluted net loss per share.

Selected financial data

Balance sheet data:	As of December 31,					As of
	1999	2000	2001	2002	2003	March 31, 2004
	(in thousands)					
Cash, cash equivalents and marketable securities	\$2,226	\$35,053	\$53,730	\$31,052	\$55,945	\$59,305
Working capital	5,450	29,081	47,477	24,171	49,097	52,586
Total assets	9,296	42,645	251,487	104,773	125,876	128,766
Deferred compensation and other liabilities	7,500	132	231	207	404	447
Redeemable convertible preferred stock	—	4,445	4,684	4,935	5,188	5,252
Deficit accumulated during the development stage	(21,921)	(46,582)	(94,827)	(301,092)	(366,971)	(383,380)
Total stockholders' equity (deficit)	(745)	31,890	235,017	90,773	111,577	114,431

Management's discussion and analysis of financial condition and results of operations

You should read the following discussion of our financial condition and results of operations in conjunction with our financial statements and the notes to those statements included elsewhere in this prospectus. This discussion contains forward-looking statements that involve risks and uncertainties. As a result of many factors, including those set forth under "Risk factors" and elsewhere in this prospectus, our actual results may differ materially from those anticipated in these forward-looking statements.

OVERVIEW

We are a biopharmaceutical company focused on the discovery, development and commercialization of therapeutic products for diseases such as diabetes, cancer, inflammatory and autoimmune diseases. Our lead product, the Technosphere Insulin System, which is currently in late Phase II clinical trials for the treatment of diabetes, consists of our dry powder Technosphere formulation of insulin and our MedTone inhaler through which the powder is inhaled into the deep lung. We believe the performance characteristics, convenience and ease of use of our proprietary Technosphere Insulin System have the potential to change the way diabetes is treated.

We were incorporated in February 1991 under the laws of the State of Delaware as Pharmaceutical Discovery Corporation. On December 12, 2001, AlleCure and CTL merged with wholly-owned subsidiaries of PDC. Pursuant to the merger, all of the outstanding shares of capital stock of AlleCure and CTL were exchanged for shares of capital stock of PDC, and AlleCure and CTL became wholly-owned subsidiaries of PDC. In connection with the merger, PDC changed its name to MannKind Corporation. On December 31, 2002, AlleCure and CTL merged with and into MannKind and ceased to be separate entities.

Since our inception in 1991 through March 31, 2004, we have incurred a cumulative net loss of \$383.4 million. We do not anticipate receiving revenues from the sales of any product prior to regulatory approval and commercialization of our Technosphere Insulin System. We expect to make substantial expenditures and to incur additional operating losses for at least the next several years as we:

- continue the development and commercialization of our Technosphere Insulin System for the treatment of type 2 diabetes, currently in late Phase II clinical trials;
- expand our proprietary Technosphere formulation technology and develop additional applications for the delivery of other drugs;
- expand our other research, discovery and development programs focused on the development of therapies for cancer, inflammation and autoimmune disorders;
- expand our manufacturing operations and quality systems to meet our currently anticipated commercial production needs as we advance the Technosphere Insulin System through Phase III clinical trials and into commercialization; and
- enter into sales and marketing collaborations with other companies, if available on commercially reasonable terms, or develop these capabilities ourselves.

We have a limited history of operations with our current management team and, to date, we have not generated any revenues from sales of any product. We currently do not have the required approvals to

Management's discussion and analysis of financial condition and results of operations

market any of our product candidates, and we may not receive them. We may not be profitable even if we succeed in commercializing any of our product candidates.

We have funded our operations primarily through private placements of equity securities. In 2003, we raised \$100.0 million through private placements of our equity securities, comprised of 3,493,194 shares of common stock sold at a weighted average price of \$14.31 per share and 980,392 shares of Series C convertible preferred stock that were subscribed for in 2003 at a price of \$51.00 per share. Of the \$50.0 million of Series C convertible preferred stock subscribed for in 2003, \$31.8 million, representing the purchase price for 624,449 shares of Series C convertible preferred stock, was received in 2003 and \$18.2 million, representing the purchase price of the remaining 355,943 shares of Series C convertible preferred stock, was received in the first quarter of 2004. All of the shares of our Series C convertible preferred stock were issued in the first quarter of 2004.

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, 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, the salaries, benefits and stock-based compensation of research and development personnel, laboratory supplies and materials, facility costs, costs for consultants and related contract research, licensing fees, and depreciation of laboratory equipment. We track research and development costs by the type of cost incurred.

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

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 the Technosphere Insulin System, we are unable to estimate with any certainty the costs we will incur in the continued development of our product candidates for commercialization. The costs required to complete the development of our Technosphere Insulin System will be largely dependent on the results of our current Phase II trials, discussions with the FDA on their requirements, the length of our clinical trials and the cost and efficiency of our manufacturing process. However, we expect our research and development costs to increase as we continue to develop new applications for our proprietary therapeutics and drug-delivery technologies, refine our manufacturing processes and move our other product candidates through preclinical and clinical trials.

Clinical development timelines, likelihood of success and total costs vary widely. We are currently focused primarily on advancing the Technosphere Insulin System through continuing Phase II and into and through Phase III clinical trials. We plan to commercialize our lead product as a treatment for type 2 diabetes. Based on the results of preclinical studies, we plan to develop additional applications of our Technosphere technology. Additionally, we anticipate that we will continue to determine which research and development projects to pursue, and how much funding to direct to each project, on an ongoing basis, in response to the scientific and clinical success of each product candidate. We cannot be certain when any revenues from the commercialization of our products will commence.

Management's discussion and analysis of financial condition and results of operations

GENERAL AND ADMINISTRATIVE EXPENSES

Our general and administrative expenses consist primarily of 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 business insurance and professional services costs.

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. On an ongoing basis we evaluate our estimates and judgments. 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.

Goodwill, intangibles and other long-lived assets

Assessing goodwill, intangibles and other long-lived assets for impairment requires us to make assumptions and judgments regarding the carrying value of these assets. Goodwill and intangible assets with indefinite lives are tested for impairment annually, or on an interim basis if events or circumstances indicate that the fair value of the asset has decreased below its carrying value. Other long-lived assets are tested 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 can not be recovered through undiscounted cash flows;
- loss of legal ownership or title to the assets; 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. For example, as described in the Results of Operations for the years ended December 31, 2003 and 2002, near the end of the third quarter of 2002, we initiated an internal study to assess whether the product development programs acquired in the merger with AlleCure and CTL were meeting their objectives. As a result of this study, our management concluded in December 2002 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, during the first quarter of 2003, we closed the CTL facility and reduced headcount for AlleCure and CTL by approximately 50%. In connection with

Management's discussion and analysis of financial condition and results of operations

our annual test for impairment of goodwill as of December 31, 2002, we determined that on the basis of the internal study, the goodwill recorded for the AlleCure and CTL units was potentially impaired. We performed the second step of our annual impairment test as of December 31, 2002 for both the potentially impaired reporting units and estimated the fair value of the AlleCure and CTL programs, as acquired in the merger, using the expected present value of future cash flows which are now expected to be negligible. Accordingly, the goodwill balance of \$151,428,000 was determined to be fully impaired and an impairment loss was recorded in the fourth quarter of 2002.

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.

Stock-based compensation

We have recorded compensation expense related to options to purchase our common stock issued to employees and consultants. We have elected to follow Accounting Principles Board (APB) Opinion No. 25, *Accounting for Stock Issued to Employees*, and related interpretations, in accounting for our stock-options issued to employees, and we have adopted the disclosure-only alternative of Statement of Financial Accounting Standards (SFAS) No. 123, *Accounting for Stock-Based Compensation*. Accordingly, we have recorded stock-based compensation expense in connection with the grant of common stock options to employees based on the intrinsic-value method provided for under APB No. 25 rather than the alternative fair-value method provided for under SFAS No. 123. The intrinsic value of an employee stock option under APB No. 25 is equal to the difference between the exercise price of the option and the estimated fair value, on the measurement date, of the common stock purchasable with the option. In the notes to our financial statements, we provide pro-forma disclosures that indicate the effect on our net income as if we had applied the fair-value method.

The measurement date for stock-based compensation, if any, in connection with an employee stock option is generally the option grant date. However, modifying option terms subsequent to the grant date can result in a re-measurement of stock-option compensation on the modification date and thereafter under certain circumstances. On October 7, 2003, our board of directors approved a re-pricing program for certain outstanding options to purchase shares of the Company's common stock granted under each of its stock plans. Under the re-pricing program, each holder of outstanding options granted under the stock plans who was an employee of the Company on November 5, 2003 could elect to exchange up to all of their outstanding options that had an exercise price greater than \$7.95 for re-priced stock options with an exercise price of \$7.95 per share and a term of four years. The option re-pricing became effective on November 5, 2003. Each replacement option vests 50% in November 2004 and the remaining 50% vests monthly until fully vested in November 2005. Employees who voluntarily resign in the 12-month period beginning November 5, 2003 will forfeit their re-priced options. Employees who are involuntarily terminated in the 12-month period beginning November 5, 2003 will vest 50% upon termination. Compensation cost for all options re-priced under the re-pricing program will be re-measured on a quarterly basis until the options are exercised, canceled or expire.

Stock options issued to consultants are accounted for in accordance with the provisions of SFAS No. 123 and Emerging Issues Task Force Issue No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*. Under SFAS No. 123, stock-based compensation for stock options granted to consultants is equal to the fair value of the stock options rather than the intrinsic value under APB No. 25. We determine the fair value of options granted to consultants using the Black-Scholes option valuation model, which was developed for use in estimating the fair value of traded options, which have no vesting restrictions and are fully transferable. The Black-Scholes option valuation model requires the input of highly subjective assumptions, including the estimated fair value of our common stock and

Management's discussion and analysis of financial condition and results of operations

expected stock price volatility. Stock-based compensation related to options granted to consultants is generally re-measured periodically as the underlying options vest.

We recognized stock-based compensation expense of \$1.6 million in 2001, \$352,000 in 2002 and \$4.5 million in 2003. Stock-based compensation expense includes amounts attributable to certain issuances of common stock for notes receivable that we have accounted for as in-substance stock options and are further described in the notes to our financial statements. Stock-based compensation expense for 2002 includes the reversal of approximately \$815,000 of stock-based compensation attributable to an in-substance stock option because the intrinsic value of the in-substance stock option was zero at December 31, 2003. Stock-based compensation expense is assigned to operating expense categories in our statements of operations according to nature of the services rendered by the employee or consultant to whom the expense applies.

Because there has been no public market for our common stock, we have estimated the fair value of our equity instruments. If future market conditions dictate significant changes in the estimates of fair value, or if a public market establishes a value for our common stock that is significantly higher than our estimated value, our results of operations could be materially impacted. In future periods we are required to re-measure stock-based compensation cost for all employee options re-priced under the re-pricing program that remain outstanding and to periodically re-measure the stock-based compensation cost of options we have granted to consultants. Since the amount of compensation cost attributable to the re-priced options and consultant options is dependent on the fair value of the Company's common stock underlying the options on the future re-measurement dates, the amount of stock-based compensation recognized in any given future period cannot be predicted and may have a material impact on our results of operations.

Accounting for income taxes

We must make significant 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, 2003, we recorded a full valuation allowance of \$80.0 million against our gross deferred tax asset balance, due to uncertainties related to 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

Three months ended March 31, 2004 and 2003

Revenues

No revenues were recorded for the quarters ended March 31, 2004 or 2003. We do not anticipate receiving revenues from the sales of any product prior to regulatory approval and commercialization of our Technosphere Insulin System.

Research and development expenses

Research and development expenses increased by \$1.2 million to \$12.8 million for the quarter ended March 31, 2004 compared to \$11.6 million for the quarter ended March 31, 2003, an increase of 10.3%. The increase was primarily due to ongoing expenditures in 2004 related to our Technosphere Insulin System. Initiation of preclinical studies in 2004 increased research expenditures by \$1.0 million. Continuation of clinical studies resulted in increased expenditures of \$1.8 million, which also resulted in increased manufacturing costs of \$1.7 million to supply clinical trial materials and our continued

Management's discussion and analysis of financial condition and results of operations

validation of our manufacturing system. These increased costs were offset by a decrease of \$3.3 million in research and development costs resulting from the termination of AlleCure product development programs and the redesign of CTL product development programs. We anticipate that our research and development expenses will increase significantly with the continuation of existing, and initiation of new, clinical trials and the resulting manufacturing costs associated with producing materials for these clinical trials. Additionally, we continue to advance our efforts in developing additional applications for our proprietary Technosphere formulation technology and developing therapies for the treatment of solid-tumor cancers.

General and administrative expenses

General and administrative expenses decreased by \$5.0 million to \$3.8 million for the quarter ended March 31, 2004 compared to \$8.8 million for the quarter ended March 31, 2003, a decrease of 56.8%. The decrease was primarily due to stock-based compensation expense of \$2.5 million resulting primarily from the modification of certain employee stock options, which was recognized in 2003 as compared to \$809,000 in 2004. Additionally, the consolidation of our California facilities into our Valencia, California facility and the reduction of the California workforce resulted in transition and severance expenses of \$2.7 million in the quarter ended March 31, 2003.

Other income (expense)

Other income of \$54,000 for the quarter ended March 31, 2004 relates primarily to investment income and receipt of \$10,000 in rental income related to leasing a portion of our facility to a third party. For the quarter ended March 31, 2003, we fully reserved the recorded rental income receivable related to the facility lease due to non-payment by the lessee, which resulted in other expense of \$51,000.

Interest income

Interest income increased by \$19,000 to \$105,000 for the quarter ended March 31, 2004 compared to \$86,000 for the quarter ended March 31, 2003, an increase of 22.1%. The increase was primarily due to higher levels of cash and marketable securities available for investment during 2004 compared to 2003.

Years ended December 31, 2003 and 2002

Revenues

No revenues were recorded for the years ended December 31, 2003 or 2002. We do not anticipate receiving revenues from the sales of any product prior to regulatory approval and commercialization of our Technosphere Insulin System.

Research and development expenses

Research and development expenses increased by \$2.9 million to \$45.6 million for the year ended December 31, 2003 compared to \$42.7 million for the year ended December 31, 2002, an increase of 6.8%. The increase was primarily due to increased clinical and manufacturing expenses for our Technosphere Insulin System. Our clinical expenses increased in 2003 due to an increase in the number of individuals participating in our Phase II clinical trials. The expansion of our manufacturing production capacity to support the anticipated Technosphere Insulin clinical trial material requirements increased manufacturing costs, which included depreciation, repair and maintenance of equipment, validation costs and development costs for new machinery. We anticipate that our research and development expenses will increase significantly with the continuation of existing and initiation of new clinical trials and the resulting manufacturing costs associated with producing materials for these clinical trials.

Management's discussion and analysis of financial condition and results of operations

General and administrative expenses

General and administrative expenses increased by \$7.5 million to \$20.7 million for the year ended December 31, 2003 compared to \$13.2 million for the year ended December 31, 2002, an increase of 56.6%. The increase was primarily due to stock-based compensation expense of \$3.8 million and transition and severance expenses of \$3.3 million, which resulted from the consolidation of our California facilities into our Valencia, California facility and the reduction of the California workforce from 198 employees as of December 31, 2002 to 80 employees as of December 31, 2003.

Other income (expense)

Other expense of \$25,000 for the year ended December 31, 2003 relates primarily to banking fees. For 2002, other income of \$487,000 is comprised primarily of rental income related to leasing a portion of our facility to a third party. For 2003, we fully reserved the recorded rental income receivable related to the facility lease due to non-payment by the lessee.

Interest income

Interest income decreased by \$158,000 to \$459,000 for the year ended December 31, 2003 compared to \$617,000 for the year ended December 31, 2002, a decrease of 25.6%. The decrease was primarily due to lower average fund balances available for investment.

Years ended December 31, 2002 and 2001

Revenues

No revenues were recorded for 2002 compared to \$326,000 recorded for the year ended December 31, 2001. For the year ended December 31, 2001, the revenues we recorded were related to payments for contract research.

Research and development expenses

Research and development expenses increased by \$22.9 million to \$42.7 million for the year ended December 31, 2002 compared to \$19.8 million in 2001, an increase of 116.2%. The increase resulted primarily from the expansion of our product development programs from 2001 to 2002. In addition, in 2002 we expanded our clinical, regulatory affairs and manufacturing efforts in Danbury, Connecticut to support our clinical trial program.

General and administrative expenses

General and administrative expenses increased by \$2.6 million to \$13.2 million for the year ended December 31, 2002 compared to \$10.6 million for the year ended December 31, 2001, an increase of 24.3%. The increase was primarily due to the expansion of administrative staff at our three separate facilities.

In-process research and development costs

Purchased in-process research and development, or IPR&D, represents the portion of the purchase price of an acquisition related to research and development activities which have not demonstrated their technological feasibility, and have no alternative future uses. For the year ended December 31, 2001, we recorded \$19.7 million of IPR&D related to the merger of AlleCure and CTL with wholly-owned subsidiaries of PDC. Since the IPR&D was determined to have no alternative future use, the \$19.7 million was charged to expense in 2001. There was no IPR&D charge for the year ended December 31, 2002.

Goodwill and impairment

In 2001, we recorded goodwill of approximately \$151.4 million as part of our acquisition of AlleCure and CTL on December 12, 2001. We reevaluate goodwill each year in connection with SFAS 142, and

Management's discussion and analysis of financial condition and results of operations

any related impairment losses are recognized in earnings when identified. Toward the end of the third quarter of 2002, we initiated an internal study to assess whether the product development programs acquired in the merger with AlleCure and CTL were meeting their objectives. As a result of this study, our management concluded in December 2002 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, during the first quarter of 2003, we closed the CTL facility and reduced headcount for AlleCure and CTL by approximately 50%. In connection with our annual test for impairment of goodwill as of December 31, 2002, we determined that on the basis of the internal study, the goodwill recorded for the AlleCure and CTL units was potentially impaired. We performed the second step of our 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, as acquired in the merger, using the expected present value of future cash flows which are now expected to be negligible. Accordingly, the goodwill balance of \$151,428,000 was determined to be fully impaired and an impairment loss was recorded in fourth quarter of 2002.

Other income (expense)

Other income increased by \$199,000 to \$487,000 for the year ended December 31, 2002 compared to \$288,000 for the year ended December 31, 2001, an increase of 69.1%. The increase was primarily a result of rental income related to the leasing of facility space.

Interest income

Interest income decreased by \$644,000 to \$617,000 for the year ended December 31, 2002 compared to \$1.3 million for the year ended December 31, 2001, a decrease of 51.1%. This decrease was primarily attributable to lower average fund balances available for investment and lower prevailing interest rates associated with cash investments.

LIQUIDITY AND CAPITAL RESOURCES

We have funded our operations primarily through the private placement of equity securities with our majority stockholder and his affiliated entities, who have invested approximately \$228.5 million of the approximately \$328.5 million that we have raised as of March 31, 2004. In 2003, we raised \$100.0 million through private placements of our equity securities, comprising 3,493,194 shares of common stock sold at an average price of \$14.31 per share, and 980,392 shares of Series C convertible preferred stock that were subscribed for in 2003 at a price of \$51.00 per share. Of the \$50.0 million of Series C convertible preferred stock subscribed for in 2003, \$31.8 million, representing the purchase price of 624,449 shares of Series C convertible preferred stock, was received in 2003 and \$18.2 million, representing the purchase price of the remaining 355,943 shares of Series C convertible preferred stock, was received in the first quarter of 2004. All of the shares of our Series C convertible preferred stock were issued in the first quarter of 2004.

As of March 31, 2004, we had \$59.3 million in cash, cash equivalents and marketable securities. We estimate that the net proceeds from this offering will be approximately \$70.0 million, assuming no exercise by the underwriters of their over-allotment option and an assumed initial public offering price of \$14.00 per share and after deducting estimated underwriting discounts and estimated offering expenses. Following this offering, we will have approximately \$129.3 million in cash, cash equivalents and marketable securities. We believe that our available cash, cash equivalents, and marketable securities, together with the net proceeds of this offering, will be sufficient to fund anticipated levels of operations into the second quarter of 2005.

We intend to use our capital resources to continue the development of our Technosphere Insulin System and to develop additional applications for our proprietary Technosphere formulation

Management's discussion and analysis of financial condition and results of operations

technology. In addition, portions of our capital resources will be devoted to expanding our other product development programs for the treatment of solid-tumor cancers and a variety of inflammatory and autoimmune diseases. We also intend to use our capital resources for general corporate purposes, which may include in-licensing or acquiring additional technologies.

We intend to raise additional capital through strategic business collaborations. In addition, we may in the future pursue the sale of equity and/or debt securities, or the establishment of other funding facilities. Issuances of debt or additional equity could impact your rights as a holder of our common stock, may dilute your ownership percentage 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. We cannot assure you, however, that any strategic collaborations, sales 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.

In the event that sufficient additional funds are not obtained through strategic collaboration opportunities, licensing arrangements, sales of securities and/or asset sales on a timely basis, we may be required to reduce expenses through the delay, reduction or curtailment of our projects, including our Technosphere Insulin System development activities, or further reduction of costs for facilities and administration.

For the quarter ended March 31, 2004, we used net cash of \$12.0 million in operating activities. This consisted primarily of a net loss for the period of \$16.4 million, which included non-cash stock-based compensation of \$1.2 million and depreciation of \$1.8 million. Additionally, accounts payable and accrued expenses increased by an aggregate of \$1.3 million. We used \$2.8 million for investing activities for the quarter ended March 31, 2004, which consisted of \$1.4 million in net purchases of marketable securities and \$1.4 million in manufacturing equipment acquisitions. We received cash of \$16.8 million from financing activities during the quarter ended March 31, 2004 consisting of \$18.2 million of the remaining proceeds due from the sale of Series C convertible preferred stock offset by \$1.4 million returned to a stockholder due to the oversubscribed sale of Series C convertible preferred stock.

Our operating activities used net cash of \$52.8 million in 2003, \$48.7 million in 2002 and \$21.2 million in 2001. During these periods, we recorded increasing expenses caused principally by increases in research and development, expanded clinical trials, business planning and recruitment of management and technical staff, which resulted in increasing operating cash outflows. We expect our negative operating cash flow to continue for several years.

Our investing activities generated \$4.1 million in 2003, principally from the proceeds from the net sales and purchases of marketable securities of \$9.2 million, offset by the purchase of property and equipment of \$5.2 million. Our investing activities used \$45.3 million in 2002 and \$39.7 million in 2001. In 2002, purchases of property and equipment used \$34.1 million and net purchases and sales of marketable securities used \$11.2 million. In 2001, investing activities consisted entirely of the purchase of property and equipment.

Our financing activities provided cash of \$82.8 million in 2003, generated primarily from the collection of \$31.8 million of stock subscriptions for 624,449 shares of Series C convertible preferred stock and \$50.0 million from the sale of 3,493,194 shares of common stock. In 2002, financing

Management's discussion and analysis of financial condition and results of operations

activities generated \$60.2 million primarily from the sale of 4,155,757 shares of common stock, which provided \$58.9 million in proceeds. In 2001, financing activities generated \$79.5 million primarily from the sale of 3,052,078 shares of common stock, which provided \$78.0 million in proceeds.

As of March 31, 2004, we did not have any off balance sheet financing arrangements.

COMMITMENTS AND CONTINGENCIES

Our contractual obligations consist of operating leases, purchase obligations, capital lease commitments and deferred compensation. Certain stockholders and officers elected to defer part or all of their compensation from 1991 through 1998, resulting in total deferred compensation of \$1.6 million at March 31, 2004. The amounts due for deferred compensation are non-interest-bearing with no repayment terms. Our other obligations are included in the table below.

At March 31, 2004, our total capital lease commitments were not material. Future payments under our operating lease obligations and open purchase commitments consist of the following at March 31, 2004 (in thousands):

Contractual obligations	Payments due in				
	Total	2004	2005	2006	After 2006
Open purchase order commitments(1)	\$6,399	\$4,749	\$1,100	\$550	—
Operating lease obligations	419	322	61	36	—
Total contractual obligations	\$6,818	\$5,071	\$1,161	\$586	—

(1) The amounts included in open purchase order commitments are subject to performance under the purchase order 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 and the acquisition of manufacturing equipment.

RELATED PARTY TRANSACTIONS

For a description of our related party transactions see "Certain relationships and related party transactions."

RECENT ACCOUNTING PRONOUNCEMENTS

In January 2003, the Financial Accounting Standards Board (FASB) issued Financial Interpretation Number 46, *Consolidation of Variable Interest Entities* (FIN 46) with the objective of improving financial reporting by companies involved with variable interest entities. FIN 46 clarifies the application of Accounting Research Bulletin No. 51 to certain entities, defined as variable interest entities, in which equity investors do not have characteristics of a controlling financial interest or do not have sufficient equity at risk for the entity to finance its activities without additional subordinated support from other parties. In December 2003, the FASB issued a revision to FIN 46, or FIN 46R, to clarify some of the provisions of FIN 46. We currently have no entities that have the characteristics of a variable interest entity. Furthermore, our adoption of the remaining provisions of FIN 46R in the quarter ended March 31, 2004 did not have an impact on our financial statements.

In May 2003, the FASB issued SFAS No. 150, *Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity*. This statement establishes how a company classifies and measures certain financial instruments with characteristics of both liabilities and equity, including redeemable preferred stock. This statement is effective for financial instruments entered into or modified after May 31, 2003, and otherwise is effective at the beginning of the interim period.

Management's discussion and analysis of financial condition and results of operations

commencing July 1, 2003, except for mandatory redeemable financial instruments of nonpublic companies, which is effective for fiscal periods beginning after December 31, 2004. The adoption did not have a material impact on its financial statements.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We have not used derivative financial instruments for speculation or trading purposes. However, we are exposed to market risk related to changes in interest rates. Our investment policy is designed to preserve capital and provide liquidity to meet projected cash requirements. Our investment portfolio currently consists of US government securities, bank obligations and corporate debt instruments for which the maturity dates average less than twelve months. We currently do not hedge against interest rate exposure. A hypothetical 100 basis point adverse move in interest rates along the entire interest rate yield curve would not materially affect the fair value of our interest-sensitive financial instruments at March 31, 2004. The modeling technique that we used measures the change in fair values arising from an immediate, hypothetical shift in market interest rates and assumes that ending fair values include principal and accrued interest. Declines in interest rates over time will, however, reduce our interest income while increases in interest rates over time will increase our interest expense. Due to the nature of our short-term investments, we believe that we are not subject to any material market risk exposure. We do not have any foreign currency or other derivative financial instruments.

Business

OVERVIEW

We are a biopharmaceutical company focused on the discovery, development and commercialization of therapeutic products for diseases such as diabetes, cancer, inflammatory and autoimmune diseases. Our lead product, the Technosphere Insulin System, which is currently in late Phase II clinical trials for the treatment of diabetes, consists of our dry powder Technosphere formulation of insulin and our MedTone inhaler through which the powder is inhaled into the deep lung. On the basis of our clinical findings to date and our understanding of current diabetes therapy, we believe the performance characteristics, convenience and ease of use of our proprietary Technosphere Insulin System have the potential to change the way diabetes is treated.

In our clinical trials to date, we have observed that our Technosphere Insulin System produces a profile of insulin levels in the bloodstream that approximates the insulin profile normally seen in healthy individuals immediately following the beginning of a meal. As a result, we believe that our Technosphere Insulin System will be beneficial not only for insulin-using diabetes patients but also for patients with type 2 diabetes who are currently using conventional therapies other than insulin. The results of our earlier studies may not be confirmed by the results of later studies. However, if further clinical trials support our initial observations, we believe the Technosphere Insulin System has the potential to be indicated for the treatment of type 2 diabetes after a patient has failed to respond adequately to diet and exercise alone. The use of insulin earlier in the progression of diabetes would represent a paradigm shift in the treatment of this disease.

To date, we have conducted multiple Phase I and Phase II clinical trials of our Technosphere Insulin System involving more than 200 individuals in Europe and the United States. Our Technosphere Insulin System has had a favorable safety profile in our clinical trials to date. We are currently conducting late Phase II clinical trials to determine dosage tolerance and optimal dosing, which, when fully-enrolled, will involve approximately 340 individuals with diabetes in Europe and the United States. At this time, we expect results from some of these clinical trials to be available in the fourth quarter of 2004 with additional data to follow in early 2005. We intend to initiate Phase III clinical trials in the United States in the first half of 2005, subject to acceptance of our Phase III protocols by the FDA.

Our Technosphere Insulin System utilizes our proprietary Technosphere formulation technology, which is based on a class of organic molecules that are designed to self-assemble into small particles onto which drug molecules can be loaded. We are in the process of developing additional Technosphere-based products for the delivery of other drugs. We also have research programs focused on the development of therapies for cancer, inflammation and autoimmune disorders.

OVERVIEW OF DIABETES

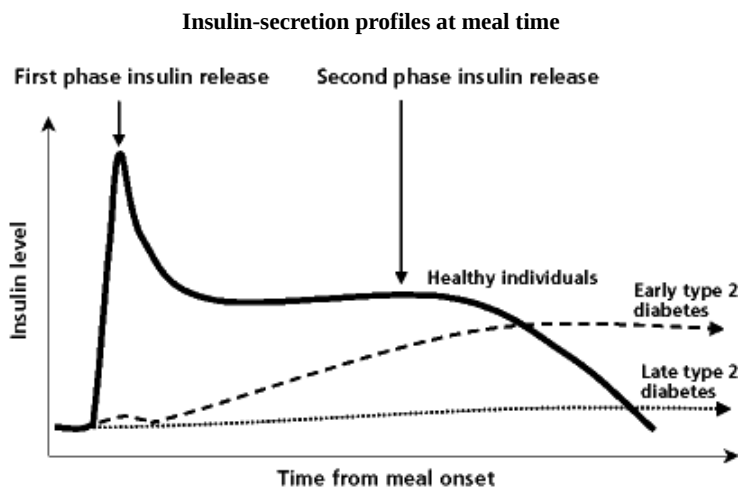
Diabetes is a major disease characterized by the body's inability to properly regulate levels of blood glucose, or blood sugar. The cells of the body utilize glucose as fuel, which is consumed 24 hours a day. Between meals, when glucose is not being supplied from food, the liver releases glucose into the blood to sustain adequate levels. Insulin is a hormone produced by the pancreas that regulates the body's blood glucose levels. Patients with diabetes develop abnormally high levels of glucose, a state known as hyperglycemia, either because they produce insufficient levels of insulin or because they fail to respond adequately to insulin produced by the body. Over time, poorly controlled levels of blood glucose can lead to major complications, including significant weight gain, blindness, loss of circulation, kidney failure, impotence, heart attack, stroke and death.

Business

According to the American Diabetes Association, or ADA, in the United States diabetes is estimated to cost society over \$132 billion each year and is currently the fifth leading cause of death by disease. Data from the United States Centers for Disease Control, or CDC, and the National Institutes of Health indicate that the risk of death due to heart disease and the risk of stroke are up to four times higher in adults with diabetes than in those without the disease. Diabetes is the leading cause of new cases of blindness among adults, kidney disease and non-traumatic lower-limb amputations. The CDC estimated that, as of 2002, approximately 18.2 million people in the United States, or 6.3% of the population, suffered from diabetes. The CDC further estimated that 13 million cases were diagnosed and under treatment as of 2002 and that 1.3 million new cases would be diagnosed per year beyond that date. The ADA estimated that, in 2002, the direct costs for required drug treatment of diabetes in the United States were approximately \$12 billion, of which approximately \$7 billion were for insulin and delivery supplies and approximately \$5 billion were for non-insulin oral medications.

There are two major forms of diabetes, type 1 and type 2. Type 1 diabetes is characterized by a complete lack of insulin secretion by the pancreas, so insulin must be supplied from outside the body in order to sustain life. In type 2 diabetes, the pancreas continues to produce insulin; however, over time it becomes increasingly unable to secrete adequate amounts of insulin to support metabolism. According to the CDC, type 2 diabetes is the more prevalent form of the disease, affecting approximately 90% to 95% of people diagnosed with diabetes.

The illustration below summarizes reports published in the *New England Journal of Medicine* and the *American Journal of Medicine* of the insulin-secretion profiles at meal time of healthy individuals and of patients with type 2 diabetes. When a healthy person begins to eat a meal, the pancreas responds with the two phases of insulin release into the bloodstream that are depicted by the solid line in the illustration below. The first phase of insulin release takes the form of a sharp spike in insulin that acts as a signal to the liver to shut off its release of glucose into the bloodstream. In the second phase of insulin release, the pancreas secretes an extended wave of insulin that acts on cells throughout the body, enabling them to absorb the glucose ingested from the meal.



As depicted by the dashed line in the illustration, individuals with early type 2 diabetes cannot produce the first-phase insulin release spike and, as a result, their liver continues to release glucose while they absorb additional glucose from the meal. This can worsen high blood sugar levels. This state forces the pancreas to compensate by secreting excessive amounts of insulin during the second phase. Over time, this repeated cycle of inadequate early release followed by over-insulinization is correlated with

Business

subsequent exhaustion of the overall ability of the pancreas to secrete additional amounts of insulin at any point following a meal, which is depicted by the dotted line in the illustration. This situation is further complicated by a decline in the ability of insulin-sensitive cells throughout the body to respond to insulin — a state known as insulin resistance. The inability to maintain control over blood glucose levels predisposes the patient with diabetes to serious, adverse health consequences.

Challenges of treating type 2 diabetes

Typically, the treatment of type 2 diabetes starts with management by diet and exercise and progresses to treatment with various non-insulin oral medications and then to treatment with insulin. Treatment through diet and exercise alone has not been an effective long-term solution for the vast majority of patients with type 2 diabetes. Non-insulin oral medications, which act by increasing the amount of insulin produced by the pancreas or by increasing the sensitivity of insulin-sensitive cells, generally have significant adverse effects and are limited in their ability to manage the disease effectively.

Insulin therapy usually involves administering several subcutaneous injections of insulin each day. However, this treatment regimen is inadequate for many reasons, including:

- Patients dislike injecting themselves with insulin due to inconvenience and pain, and so tend not to comply adequately with prescribed treatment regimens. As a result, they do not properly medicate themselves.
- Even when properly administered, subcutaneous injections of insulin do not replicate the natural first-phase insulin spike. Instead, injected insulin enters the bloodstream over a period of several hours. The consequence is for patients with diabetes to have inadequate levels of insulin present at the initiation of a meal and to be over-insulinized between meals. This results in high blood glucose levels early after meal onset followed by a tendency for glucose to fall to abnormally low levels, a state known as hypoglycemia, during the period between meals. Hypoglycemia can result in loss of mental acuity, confusion, increased heart rate, hunger, sweating and faintness and, at very low glucose levels, loss of consciousness, coma and death.

Because of the problems associated with the conventional administration of insulin by injection, patients and their physicians have sought alternative methods for the delivery of insulin, including insulin pumps and oral delivery of insulin. Insulin pumps are generally considered appropriate only for a small segment of the diabetes population. The development of an effective oral insulin formulation has been hampered by problems of delivering a sufficient supply of insulin to the body at the time when it is needed. Because insulin is largely broken down in the digestive system, much of the insulin delivered orally does not enter the bloodstream and there is an undesirable variability in the rate of insulin absorption.

One alternative to conventional insulin therapy being pursued by a number of pharmaceutical and biotechnology companies is the inhalation of an insulin formulation into the deep lung, where it can be absorbed directly into the bloodstream. Delivering insulin through the pulmonary route is less invasive than administering it by injection and, according to a 2001 study reported in *Diabetes Care*, is associated with greater patient satisfaction, which should increase patient compliance and lead to better glucose control.

We anticipate that the first pulmonary insulin product developed by another pharmaceutical company may be approved for commercial sale as early as 2005. Although this product should be an important development for diabetes care, we believe that it will only partially address the shortcomings of conventional insulin therapy. A long sought-after goal in the treatment of diabetes has been to produce a profile of insulin levels in the bloodstream that approximates the first-phase insulin release spike normally seen in healthy individuals following the beginning of a meal. Based on several published reports including a 2004 review article published in *Diabetes Care*, it would appear that the first

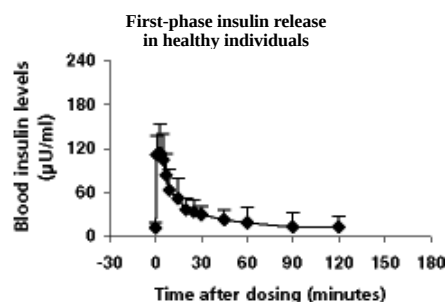
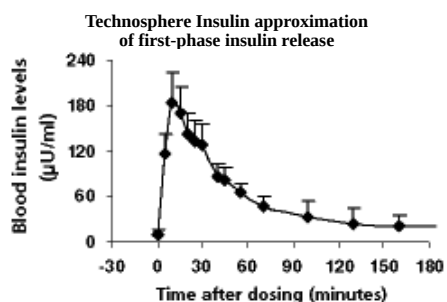
Business

pulmonary insulin products, if and when approved, may not deliver insulin to the bloodstream rapidly enough to approximate the natural first-phase insulin release spike.

THE MANNKIND SOLUTION

Based upon our clinical data, we believe our Technosphere Insulin System will be the first commercially available therapy to produce a profile of insulin levels in the bloodstream that approximates the natural first-phase insulin release spike normally seen in healthy individuals following the beginning of a meal. To date, we have conducted Phase I and Phase II clinical trials involving more than 200 individuals in Europe and the United States; however, until we have completed larger studies of efficacy and long-term safety, we cannot be certain that we will be able to repeat and validate our findings from studies that involved fairly small numbers of participants.

The clinical data below show the approximation of first-phase insulin release in more detail. The chart on the left shows the mean changes in blood insulin levels of 12 patients with type 1 diabetes who inhaled a dose of our Technosphere Insulin prior to eating a standardized meal. For illustration purposes, we have shown some of our data from patients with type 1 diabetes, whom we studied in order to observe the response to administration of Technosphere Insulin without interference from the natural production of insulin. We have obtained similar results from all participants in our clinical studies, including patients with type 2 diabetes. The key feature of the response shown on the left is the time taken for blood insulin levels to peak, which was approximately ten minutes in this study. The magnitude of the response is related to the dose of Technosphere Insulin administered; we have observed in our clinical trials that the timing of the response is consistent across a range of doses. For comparison purposes, these data are presented next to a chart that shows data published in 1981 in the *American Journal of Medicine* from nine healthy individuals who were rapidly administered a glucose solution intravenously — an experimental protocol that allowed investigators to evaluate the characteristics of the normal first-phase insulin release. These charts show that the rapid time-to-peak blood insulin levels produced by the Technosphere Insulin System in this study approximates the timing that has been demonstrated for first-phase insulin release in healthy individuals, which generally occurs within six minutes after food reaches the digestive system.



By approximating the first-phase insulin release spike, our Technosphere Insulin System may allow patients with some pancreatic function to achieve greater control over their glucose levels, which we expect may reduce exhaustion of insulin-secreting cells in the pancreas and possibly also reduce the degree of insulin resistance. This effect would be beneficial in patients with type 2 diabetes that have advanced to the point of requiring conventional insulin therapy, patients that are being treated with non-insulin oral medications as well as patients currently using diet and exercise therapy but who are having difficulty achieving proper glucose control. If further clinical trials confirm our observations to date, we believe our Technosphere Insulin System has the potential to be indicated for the treatment of type 2

Business

diabetes after a patient has failed to respond adequately to diet and exercise alone. The use of insulin earlier in the progression of diabetes would represent a paradigm shift in the treatment of the disease.

Our proprietary pulmonary delivery platform consists of our dry powder Technosphere formulation and our MedTone inhaler through which the powder is delivered into the deep lung. Our Technosphere formulation technology is centered on a class of organic molecules that are designed to self-assemble into small particles. Certain drugs, such as insulin, can be loaded onto these particles. The structural characteristics of loaded Technosphere particles (particle size and surface topography) impart aerodynamic properties that we believe make them particularly well suited for inhalation delivery.

In order to formulate Technosphere Insulin, we combine solutions of insulin and the Technosphere material to form a mixture, which is then dried to form the insulin-loaded powder. In our preclinical studies, we have observed that the Technosphere Insulin formulation is able to pass through the surface cells of the lung more rapidly than insulin alone. We believe this attribute is largely why our Technosphere Insulin System can approximate the natural first-phase insulin release spike.

We have developed a proprietary, palm-sized and easy-to-use dry powder inhaler for use with proprietary, single-use, disposable, plastic cartridges containing Technosphere-formulated drugs. The inhaler has been used in multiple Phase I and Phase II clinical trials with Technosphere Insulin. We believe that the compact size and design of our MedTone inhaler, shown below, make it simple to use and unobtrusive, which we believe should facilitate patient compliance. It also incorporates several features designed to ensure that the drug is delivered appropriately to the deep lung, including:

- breath actuation, which means that the patient does not need to coordinate a breath with any manipulation of the device, such as priming or pumping; and
- an airflow regulator that is intended to deliver a consistent airflow from patient to patient and from use to use, even in patients with restricted airflow capacity.

The MedTone inhaler in the closed position



We believe that our Technosphere Insulin System has advantages over other competitive pulmonary insulin delivery systems, principally due to our proprietary technology. These advantages include:

- *Approximates natural first-phase insulin release spike.* A major advantage of our Technosphere Insulin System is the speed with which the insulin is delivered to the patient's bloodstream.

Typically, regular insulin delivered by subcutaneous injection is delivered to the bloodstream slowly, resulting in peak insulin levels in about 120 to 180 minutes. Insulin suppliers have developed “rapid-acting” insulin analogs, which are variations of insulin that reach peak blood levels in 30 to 90 minutes. Based on our analysis of published reports, including a 2004 review article published in *Diabetes Care*, we believe that other pulmonary insulin products in development deliver peak insulin levels in 35 to 90 minutes. This timing does not approximate the natural first-phase insulin release spike, which generally occurs within six minutes after food reaches the digestive system. In contrast, our clinical trials have shown that our Technosphere Insulin System produces peak insulin levels in 10 to 14 minutes, which approximates the timing of the body’s natural first-phase insulin release spike. Because our product produces an early insulin profile that resembles that seen in healthy individuals, we anticipate that our insulin therapy may be able to achieve better control over the patient’s glucose levels throughout the day, especially following a meal.

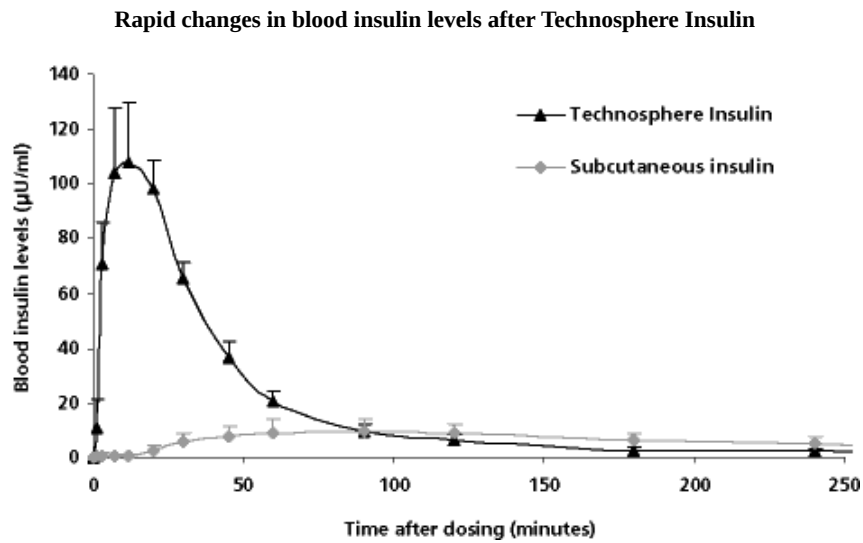
- *Ease of use.* Our MedTone inhaler is light, is easy to use and fits in the palm of the patient’s hand. To administer a dose, the patient opens the device, inserts a single-dose cartridge of Technosphere Insulin powder into the inhaler, inserts the mouthpiece into the mouth and takes a deep breath, thereby drawing the powder deep into the lungs. Moreover, we believe the timing for administering Technosphere Insulin is more convenient than subcutaneous injection. In our clinical trials, the optimal time for taking a dose of Technosphere Insulin has been found to be at the start of a meal or shortly thereafter. With subcutaneous injection, it is recommended that the user try to time a dose 15 to 45 minutes before the expected mealtime.
- *More efficient delivery of pulmonary insulin.* Based on our clinical trials of Technosphere Insulin and on our analysis of publicly available information regarding the performance of other pulmonary insulin systems in development, we believe that the inhalation of a specified amount of insulin formulated as Technosphere Insulin produces blood insulin levels over a measured period of time that are approximately three times greater than that produced by the same amount of insulin administered via the pulmonary delivery systems being developed by other pharmaceutical companies.
- *Safety.* Based on our clinical trials to date, Technosphere Insulin appears to cross lung tissue rapidly, with no observed accumulation of either insulin or the carrier particles in the lung. In addition, our preclinical studies have shown that the Technosphere material does not need to be metabolized to be eliminated and is rapidly excreted in the urine. Technosphere Insulin has not generated any serious, drug-related adverse events in our clinical trials to date, but these results are necessarily preliminary until we have completed long-term safety studies.

OUR CLINICAL TRIAL RESULTS

We have conducted multiple Phase I and Phase II clinical trials of the Technosphere Insulin System in more than 200 individuals in Europe and the United States. We are currently conducting two late Phase II multi-center clinical trials: one in the United States, which, when fully-enrolled, will involve approximately 140 individuals with diabetes and one in Europe, which, when fully-enrolled, will involve approximately 200 individuals with diabetes. This section describes the results of our completed studies; later stage clinical trials might not confirm the findings from these earlier stage trials.

The first of our completed clinical trials were performed in Europe as Phase I trials in healthy volunteers. These clinical trials produced the first evidence in humans that inhalation of Technosphere Insulin was accompanied by a rapid rise in blood insulin levels. The chart below shows the mean profiles of insulin delivery into the bloodstream in five healthy volunteers following administration of

Technosphere Insulin and following administration of insulin by subcutaneous injection. These data indicated that the administration of Technosphere Insulin could produce peak insulin levels in a much shorter period of time than could subcutaneous injection, fast enough to suggest that our product might be used to approximate the first-phase insulin release spike.



We performed additional clinical trials in Europe and the United States as Phase II investigations in patients with type 1 and type 2 diabetes. These clinical trials evaluated various measures of the performance and safety of the Technosphere Insulin System, including the variability of insulin delivered to the bloodstream following inhalation as well as the variability of the effect of our Technosphere Insulin System on blood glucose levels. The results indicated that our Technosphere Insulin System produced no greater variability than that obtained with traditional subcutaneous insulin administration. In fact, a specified dose of Technosphere Insulin appeared to be able to maintain consistent blood glucose levels despite differences in the caloric content of a meal. This is unlike the situation with conventional subcutaneous injection of insulin, which has to be closely tied to the amount of food eaten in order to avoid the risk of hyper- or hypoglycemia. Another finding that emerged from our completed Phase II clinical trials was that the optimal time for individuals with diabetes to inhale Technosphere Insulin is immediately before the first mouthful of food or within 15 minutes thereafter. We believe this highly convenient treatment regimen should lend itself to compliant and reliable self-administration by patients, given that other forms of insulin delivery that are currently marketed recommend dosing up to 15 to 45 minutes before a meal begins, raising issues such as miscalculation of time or unanticipated change in meal availability.

Our Phase I and II clinical trials have indicated that use of the Technosphere Insulin System is associated with high insulin bioavailability, which is a measure of the amount of insulin that is transferred to the bloodstream from the dosage form of the product. Bioavailability is typically expressed as a relative measure, compared to the amount of insulin that enters the bloodstream over the same period of time following the subcutaneous administration of the same quantity of regular human insulin. Based on the results of our clinical trials and on our analysis of published reports of the performance of other pulmonary insulin systems in development, we believe that the relative bioavailability associated with our Technosphere Insulin System is up to three times greater than that reported for the other inhaled insulin platforms.

Business

We are currently conducting two late Phase II clinical trials, one in the United States and the other in Europe. These clinical trials will provide further information on safety of the Technosphere Insulin System and its efficacy in maintaining blood glucose control. These clinical trials will also assist with the selection of appropriate doses of Technosphere Insulin for use in subsequent Phase III clinical trials. Twenty-seven clinical research centers are participating in the US study and thirty centers are participating in the European trial. These sites include major university research centers as well as well-known diabetes specialty clinics. Our clinical trials in Europe are monitored by a clinical research organization.

We plan to conduct multiple Phase III safety and efficacy clinical trials in different regions of the world, including the United States and Europe. We anticipate that the first US-based Phase III clinical trials will start in the first half of 2005, although our current plans allow for the initiation of the Phase III program in other countries as early as the last quarter of 2004, subject to the regulatory approval process of the relevant jurisdictions. We anticipate that the total clinical trial program will involve more than three thousand patients using the Technosphere Insulin System alone or in combination with other therapies. In the United States, we have initiated the first of several long-term safety clinical trials, which will follow the safety experience of the individuals who participate in our Phase II and Phase III clinical trials.

To date, we have not observed any serious side effects in our clinical trials that can be directly attributed to the use of Technosphere Insulin. In some patients, we have observed mild coughing and some hypoglycemic events, all classified as mild to moderate. Other adverse events reported in our clinical trials— including backache, common cold, pneumonia, anemia and diarrhea— were either found to be unrelated to the administration of Technosphere Insulin or could not be conclusively linked to its usage. We have an ongoing program of safety surveillance and adverse event reporting for the purpose of evaluating the ongoing safety data concerning the use of our Technosphere Insulin System. Our safety data are necessarily preliminary until we have completed longer-term safety studies.

OUR RESEARCH PROGRAMS

Additional applications of our proprietary technosphere formulation technology

We believe that our proprietary Technosphere formulation technology is a platform that provides a wide range of alternatives for non-invasive pulmonary delivery of drugs that currently require injection. We believe our proprietary Technosphere formulation technology can also be extended to other forms of local administration, such as gastrointestinal delivery, because of its apparent ability to stabilize drugs and facilitate transport across cellular membranes, thereby enhancing the selectivity, ease of use and general effectiveness of existing drugs.

We are developing additional applications for our proprietary Technosphere formulation technology by formulating other drugs for pulmonary delivery, primarily for metabolic and immunological diseases.

Immunology research programs

Our Technosphere research activities are complemented by additional research efforts aimed at the discovery and development of novel drugs. The emphasis of our drug discovery program is to develop drugs that affect the activity of the immune system in order to treat cancer and a variety of inflammatory and autoimmune diseases.

The immune system is a network of cells and organs that defends the body against infection and abnormal cells, such as cancer and transplanted cells. A key element of the immune system is its ability to distinguish between healthy cells and foreign or diseased cells that do not belong in the body. The immune system accomplishes this task by recognizing distinctive molecules found on the surface of each cell as either normal or abnormal, and responding to them appropriately.

Business

Any substance capable of triggering an immune response is known as an antigen. An antigen can be all or part of a pathogenic organism or it can be a by-product of diseased cells. Certain specialized cells of the immune system sample antigens present in the body and present small fragments, known as epitopes, of foreign antigens to other cells of the immune system whose function is to destroy any cell that expresses the same epitope; this is known as cell-mediated immunity. In this way, the immune system can launch a very specific response to infection or disease.

We are developing therapies for the treatment of solid-tumor cancers using our proprietary technologies for discovering critical tumor-related antigens, for designing DNA- and peptide-based compounds that evoke a cell-mediated immune response to those antigens and for delivering the compounds in vivo to the immune system in a manner that stimulates a potent response.

We believe that our therapeutic approach addresses several deficiencies inherent in earlier approaches to cancer immunotherapy, including:

- *Specificity.* We target cancer epitopes to which the immune system has not developed a tolerance, instead of targeting the dominant epitopes expressed by cancerous cells, many of which are tolerated by the immune system. We have developed technology to identify the non-tolerated epitopes on the cancer cell surface and we have developed a method of modifying these epitopes that is designed to activate an immune response. Through this process, we believe that the body's tolerance of the cancer cells can be broken, leading to the destruction of the cancer by the immune system.
- *Administration.* Our compounds are delivered directly into the patient's lymph nodes, where studies have shown they will have the greatest impact. In contrast to the conventional subcutaneous or intramuscular route of administration, we believe that the direct delivery of our compounds will bring local high concentrations of the active components of our compounds into contact with high concentrations of the cells needed to generate a potent cell-mediated immune response.
- *Selectivity, potency and duration of response.* We deliver our therapeutic compounds in a manner that we believe primes the immune system to respond to cancer cells expressing specific epitopes, in much the same way that a chronic infection evokes a progressively increased immune response to an invading bacteria. Our administrative regimen is designed to boost the immune response over the course of a treatment cycle so that it becomes increasingly potent and long acting.

We have conducted initial studies of our cancer therapy in Europe and the United States, including Phase I and II clinical trials in the United States that involved 42 patients who had progressed to late stages of skin cancer. We observed that the delivery of a prototype formulation, targeting a single cancer epitope, was well tolerated by melanoma patients and produced a response by their immune system against that specific epitope. In late stages of such diseases, there are usually multiple generations of such cells, expressing multiple epitopes. Although we believe that our clinical data to date have been encouraging, we did not observe a strong correlation between the evoked immune response and clinical responses. As a result, we have continued to refine our cancer therapy program. We have developed several product candidates and expect to begin preclinical safety tests for one of these product candidates later this year, with the goal of commencing clinical trials in 2005. The results of these subsequent clinical trials may differ from the findings of our earlier trials.

To complement our cancer products and to broaden our addressable market, we are also developing drugs targeted toward inflammatory and autoimmune diseases. Several common diseases, including multiple myeloma, rheumatoid arthritis, lupus and multiple sclerosis, are characterized by the dysfunction of key cells in the immune system, called B-cells and T-cells, which are agents of the immune system that the body uses to destroy infectious and aberrant materials. We have focused our

Business

attention on certain proteins that govern the development and function of B-cells and T-cells. By changing the activity of these proteins, we believe we can modify the immune response associated with a variety of immune system diseases. We have identified a number of molecules that are effective at changing the activity of these proteins in vitro and are in the process of optimizing these molecules.

OUR STRATEGY

Our objective is to develop products in the major therapeutic areas of diabetes, cancer, inflammatory and autoimmune diseases. Our strategy is to achieve this objective by doing the following:

- *Commercialize our Technosphere Insulin System for the insulin-using diabetes market.* We intend to advance our Technosphere Insulin System into and through Phase III clinical trials and then into commercialization, with the goal of establishing a significant presence for Technosphere Insulin in the insulin-using diabetes market. We believe that the market for insulin products will expand significantly among patients with type 2 diabetes as a result of the entry of other pulmonary insulin products, primarily due to the non-invasive nature of pulmonary insulin delivery. We believe the advantages of the Technosphere Insulin System, as compared to other pulmonary insulin products, will enable us to capture a significant portion of the existing and expanded insulin-using diabetes market.

- *Establish our Technosphere Insulin System as the preferred drug therapy within the broader population of people with type 2 diabetes.* Our target markets also include patients with type 2 diabetes who are currently using conventional therapies other than insulin, including:
 - Patients currently using diet and exercise therapy but who are having difficulty achieving proper blood glucose control;

 - Patients for whom diet and exercise therapy has failed but who otherwise would have started non-insulin oral medications; and

 - Patients currently using non-insulin oral medications.

We believe our Technosphere Insulin System will be the first commercially available therapy to produce a profile of insulin levels in the bloodstream that approximates the first-phase insulin release spike normally seen in healthy individuals following the beginning of a meal. We believe that no other conventional therapy has demonstrated that it can approximate the first-phase insulin release spike, and we are not aware of any other therapy in development that makes this claim. As a result, we believe that our Technosphere Insulin System has the potential to become the preferred drug therapy for the broader population of people with type 2 diabetes.

- *Seek a strategic collaboration for the development, marketing and commercialization of our Technosphere Insulin System.* We are actively exploring collaborations with large pharmaceutical companies in the United States, Europe and Japan that would provide marketing, sales and financial resources to commercialize and sell our Technosphere Insulin System. We have not licensed or transferred any of our rights to this product and we believe this will enable us to obtain advantageous terms in potential collaborations. We intend to retain worldwide manufacturing rights for our Technosphere Insulin System.

- *Expand our proprietary Technosphere formulation technology for the delivery of other drugs.* We are developing additional applications for our proprietary Technosphere formulation technology by formulating other drugs for pulmonary delivery, primarily for metabolic and immunological diseases. We believe our proprietary Technosphere formulation technology can also be extended to other forms of local administration, such as gastrointestinal delivery, because of its apparent ability to stabilize drugs and facilitate transport across cellular membranes.

Business

- *Build upon our expertise in immune system diseases to develop new drugs.* We intend to build upon our expertise and intellectual property portfolio to develop new treatments for diseases other than diabetes. We are conducting research programs focused on the development of therapeutic compounds for the active immunological treatment of cancer as well as inflammatory and autoimmune diseases.

SALES AND MARKETING

We currently have no sales, marketing or distribution capabilities and have no experience as a company in marketing or selling pharmaceutical products. Our efforts have primarily been directed at developing products for a number of different markets. Assuming that we receive regulatory approval for our product candidates, we anticipate that we will have to pursue different sales and marketing strategies tailored to each particular product and market segment. In order to commercially market any of our products, we will also need either to develop a sales and marketing infrastructure ourselves or collaborate with third parties who have greater sales and marketing capabilities and have access to potentially large markets.

Although we believe that establishing our own sales and marketing organizations in North America would have substantial advantages, we recognize that this will not be practical for some of our products and that collaborating with companies with established sales and marketing capabilities in a particular market or markets may be a more effective alternative for some products. To date, we have retained worldwide commercialization rights for all of our products, including our lead product, the Technosphere Insulin System. We believe that this will give us the flexibility to enter into favorable collaborations to provide the necessary sales and marketing support.

Our goal is to have our partners fund the clinical development and commercial launch of the Technosphere Insulin System in their respective countries. We are currently seeking to enter into collaborations to assist us in the development and commercialization of our Technosphere Insulin System in the United States, Europe and Japan, and we may also create in-house sales and marketing operations in certain key markets, particularly in the United States.

MANUFACTURING AND SUPPLY

We are in the process of negotiating a long-term supply agreement with the independent third party that is currently manufacturing and supplying our MedTone inhaler and the cartridges that are inserted into it. We rely on this manufacturer to comply with relevant regulatory requirements, including compliance with QSRs. We believe our manufacturer has the capacity to meet our Phase III clinical and initial commercial requirements and that it complies with relevant regulatory requirements. We purchase human recombinant insulin under a long-term contract with Diosynth B.V., a global producer of insulin. This agreement has no specified termination date, but generally may be terminated upon two-years' advance notice by either party. In addition, Diosynth has agreed to support our regulatory filings relating to the Technosphere Insulin System in the United States and abroad. We believe Diosynth has sufficient capacity to provide us with sufficient quantities of insulin to support our needs through the initial stages of commercialization.

We must rely on our insulin supplier to maintain compliance with relevant regulatory requirements including cGMP. Currently, we manufacture the raw Technosphere material, but we are in the process of developing a relationship with a secondary manufacturer to supply us with commercial quantities of this raw material. Like us, our third-party manufacturers are subject to extensive governmental regulation.

We formulate and fill the Technosphere Insulin powder into plastic cartridges and blister package the cartridges in a manufacturing suite in our Danbury facility. We believe that our Danbury facility has

Business

adequate capacity to meet our currently anticipated clinical trial needs. We are continuing to increase our filling and packaging capacity through the acquisition of new equipment and the construction of new clean rooms and other manufacturing facilities. We believe that these building improvements have been adequately validated to date and that the facility continues to conform with cGMP. We recently initiated the design and construction of a modular filling and packaging system that will increase our filling and packaging capacity. The new system is designed to operate in a very small space and can be expanded using multiple units to meet our currently anticipated commercial production needs.

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. We have also in-licensed certain technology.

With respect to our Technosphere Insulin System, our core patents claim the composition of matter of the Technosphere material as well as methods for manufacturing unloaded Technosphere particles and Technosphere particles that incorporate drugs. The first of these patents expires in 2012, but subsequent patents provide additional coverage of the composition of matter of the current product until 2020. We also hold patents that claim methods of using Technosphere particles for the pulmonary delivery of drugs. These patents relating to Technosphere Insulin do not expire until 2015. In addition, we are prosecuting patent applications related to the MedTone inhaler device and the capsules that contain the dry powder. We have filed and intend to continue to file additional patent applications on improvements to the Technosphere technology and its manufacture, as well as on specific compositions of matter formed using this technology in combination with drugs. To date, we have been issued nine US and foreign Technosphere-related patents and have filed 25 applications in different jurisdictions claiming inventions related to the Technosphere technology and the dry powder inhaler.

Our cancer immunotherapy program is built on proprietary methods for the selection, design and administration of epitopes. We have filed 54 patent applications relating to this technology, both as methods of use and compositions of matter. We are pursuing patents on the use of our administration method to induce and maintain a cell-mediated immune response. The prosecution is ongoing in many jurisdictions; however, we have been granted patents for this method in Australia and New Zealand, which do not expire until 2018. We also have patent applications related to differential antigen processing and product designs. One patent from this group has issued in the United States, which provides us with protection until at least 2020. In addition to applications of these broad technologies, we have filed and will continue to file patent applications on specific compounds and the protocols for administering them.

In the area of immune modulation, we have obtained an exclusive license from Harvard University for two patent applications and licenses from the Dana Farber Cancer Institute and from the National Institutes of Health to five patents, all of which cover compositions of matter or methods for modulating the activity of B-cells and T-cells. These licenses are worldwide and include the right to sublicense. The issued patents have terms that expire beginning in 2010 and ending in 2020. We have also filed and expect to continue to file additional patent applications on improvements to these technologies.

Business

The fields of pulmonary drug delivery and cancer therapies are 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 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 will be 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, patent applications in the United States filed before November 29, 2000 are currently maintained in secrecy until the patent issues, although in certain countries, including the United States for applications filed after November 29, 2000, 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 creator of inventions 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 Insulin System and cancer vaccine products under development, we have identified certain third-party patents that a court may interpret to restrict our freedom to operate (that is, to cover our products) in the areas of Technosphere formulations, pulmonary insulin delivery and the treatment of cancer. Specifically, we have identified certain third-party patents having claims relating to chemical compositions of matter and pulmonary insulin delivery that may trigger an allegation of infringement upon the commercial manufacture and sale of our Technosphere Insulin System. We have also identified third-party patents disclosing methods and compositions of matter related to DNA-based vaccines that also may trigger an allegation of infringement upon the commercial manufacture and sale of cancer therapy. We believe, based in part on advice of counsel, 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 products or cancer therapies were 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 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. 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 USPTO to determine priority of invention. We may be required to participate in interference proceedings involving our issued patents and pending applications.

Business

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 developed independently by them or others to our projects, 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 intensely competitive and characterized by rapidly evolving technology and intense research and development efforts. We expect to compete with companies, including the 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, ease of use and cost.

We believe our Technosphere Insulin System provides us with 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 our Technosphere Insulin System. 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.

Pulmonary and oral insulin delivery systems

Several pharmaceutical and biotechnology companies are developing systems for the pulmonary delivery of insulin. Pfizer, Inc. and Aventis, in collaboration with Nektar Therapeutics, have been conducting Phase III clinical trials for the Exubera product and in March 2004 filed a submission seeking regulatory approval in Europe. Novo Nordisk A/S, in collaboration with Aradigm Corporation, has a pulmonary insulin product in Phase III clinical trials, and Eli Lilly and Company, in collaboration with Alkermes, Inc., is also developing a pulmonary insulin product, which is currently in Phase II clinical trials. On the basis of published reports, we believe that the performance characteristics of our Technosphere Insulin System will have an advantage over these other pulmonary insulin products, particularly with respect to time-to-peak blood insulin levels and relative bioavailability.

Business

There are also several companies, including Nobex Corporation, Genex Biotechnology Corporation and Emisphere Technologies, Inc., that are pursuing development of products for the oral delivery of insulin. We believe these products are currently in relatively early clinical trials.

Non-insulin oral medications

We expect that our Technosphere Insulin System will compete with currently available non-insulin oral medications for type 2 diabetes. These products include sulfonylureas, metformin and insulin sensitizers. The sulfonylureas, which are mostly generic, act by directly stimulating insulin secretion and have been the principal non-insulin oral medication used to treat type 2 diabetes for several decades. Metformin, which is now available as a generic drug and is also marketed by Bristol-Meyers Squibb Company as Glucophage, has also been widely used for the treatment of type 2 diabetes. Insulin sensitizers, including Avandia, which is being marketed by GlaxoSmithKline PLC, and Actos, which is being marketed by Takeda Pharmaceuticals North America, Inc./Eli Lilly & Company, are increasingly being used to treat type 2 diabetes.

Injected insulin

In the subcutaneous insulin market, our competitors have made considerable efforts to develop faster acting injectable insulin formulations. Humalog, which was developed by Eli Lilly and Company, and Insulin Aspart, or NovoLog, which was developed by Novo Nordisk A/S, are the two principal injectable insulin formulations with which we expect to compete.

Immunotherapy

Over the last decade or so, a variety of companies have sought to develop therapeutic compounds that provide a selective immune response against cancer. Some of these companies, including Dendreon Corporation, Antigenics Inc., CancerVax Corporation and Corixa Corporation, have focused on products derived from the patients' own cancer, which can take the form of whole cells or cell fragments, or on tumor antigens extracted from cancerous cells. Other companies, including Progenics Pharmaceuticals, Inc., Therion Biologics Corporation and Vical Incorporated, are pursuing therapies designed to work across a broad spectrum of patients and tumor types.

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 drug products. These agencies, through regulations that implement the Food, Drug and Cosmetic Act, as amended, or FDCA, and other regulation, regulate research and development activities and the development, testing, manufacture, labeling, storage, shipping, approval, advertising, promotion, sale and distribution of such products. In addition, if our products are marketed abroad, they also are subject to export requirements and to regulation by foreign governments. The regulatory clearance 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, 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 a new pharmaceutical 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

Business

must be conducted in compliance with good laboratory practice regulations. Violations of these regulations can, in some cases, lead to invalidation of the studies, requiring such studies to be replicated. 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 investigational 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. Companies also must generally determine the details of properly treating pediatric patients with a drug and this can sometimes mean that specific pediatric studies must be performed. Human clinical trials are typically conducted in the following four sequential phases that may overlap or be combined:
 - In Phase I, the drug is initially introduced into a small number of individuals and tested for safety, dosage tolerance, absorption, metabolism, distribution and excretion. Phase I clinical trials are often conducted in healthy human volunteers and such cases do not provide evidence of efficacy. In 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 traditionally obtained in Phase II clinical trials. Consequently, these types of trials are frequently referred to as Phase I/ II 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 II 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 III 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 III clinical trials usually include a broader patient population so that safety and efficacy can be substantially established. Phase III clinical trials begin once Phase II evaluations demonstrate that a dosage range of the product is effective and has an acceptable safety profile.
 - Phase IV 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 IV 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.
-

Business

- 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 cGMP requirements. 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 a new drug application, or NDA, for non-biological drugs such as insulin, based on the clinical trials. The results of pharmaceutical 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.
- The FDA reviews all NDAs submitted before it accepts them for filing. It may request additional information rather than accepting an application for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth review of the NDA. The FDA has substantial discretion in the approval process and may disagree with an applicant's interpretation of the data submitted in its NDA and information. Also, as part of this review, the FDA may refer the application to an appropriate advisory committee, typically a panel of clinicians, for review, evaluation and a recommendation. The FDA is not bound by the recommendation of an advisory committee. Manufacturing establishments often also are subject to inspections prior to NDA approval to assure compliance with cGMP and with manufacturing commitments made in the relevant marketing application. Under the Prescription Drug User Fee Act, or PDUFA, submission of an NDA with clinical data requires payment of a fee. In fiscal year 2004 the required fee is \$573,500. In return, the FDA assigns a goal for standard applications of 10 months from acceptance of the application to return of a first "complete response," in which the FDA may approve the product or request additional information. There can be no assurance that an application will be approved within the performance goal timeframe established under PDUFA.
- FDA approval of the NDA must be granted prior to any commercial sale or shipment of the product. The FDA may deny an NDA approval if safety, efficacy or other regulatory requirements are not satisfied. The FDA may also require additional testing or information before approving the NDA. If regulatory approval of the product is granted, such approval may require post-marketing testing and surveillance to monitor the safety of the product or may entail limitations on the indicated uses for which the product may be marketed or advertised. The FDA may require additional testing or information before approving the NDA. In addition, product approval may be withdrawn if compliance with regulatory standards is not maintained or if problems occur following the commencement of marketing.

Clinical trials are designed and conducted in a variety of ways. A "placebo-controlled" trial is one in which the trial tests the results of a group of patients, referred to as an "arm" of the trial, receiving the drug being tested against those of an arm that receives a placebo, which is a substance of identical appearance that is not therapeutic in a medical or chemical sense. In a "double-blind" study, neither the researcher nor the patient knows into which arm of the trial the patient has been placed, or whether the patient is receiving the drug or the placebo. "Randomized" means that upon enrollment, patients are placed into one arm or the other at random by computer. "Parallel control" trials generally involve a study arm with a patient population that is not exposed to the study medication (i.e., is either on placebo or standard treatment protocols) for comparison to the drug being tested and groups are assigned upon patient admission to the study and remain in those groups for the duration

Business

of the study. An “open label” study is one where the researcher and the patient know that the patient is receiving the drug. A trial is said to be “pivotal” if it is designed to meet statistical criteria with respect to pre-determined “endpoints,” or clinical objectives, that the sponsor believes, based usually on its interactions with the relevant regulatory authority, will be sufficient for regulatory approval. In most cases, at least two “pivotal” Phase III clinical trials are necessary for approval. Under the Pediatric Research Equity Act of 2003, an NDA also must include an assessment, generally based on clinical study data, on the safety and efficacy of a drug 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 products.

Medical products containing a combination of new drugs, biological products, or medical devices may be 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 premarket review of combination products, the FDA designates one of its centers to have primary jurisdiction for the premarket review and regulation of both components. The determination whether a product is a combination product or two separate products is made by the FDA on a case-by-case basis. We have had discussions with the FDA about the status of our Technosphere Insulin System as a combination product and we have been told that the FDA considers our product a combination drug/device. There have been some indications from the FDA that the review of a future marketing application for our Technosphere Insulin System will involve three separate review groups of the FDA: (1) the Metabolism and Endocrine Drug Products Division; (2) the Pulmonary Drug Products Division; and (3) the Center for Devices and Radiological Health within the FDA that reviews Medical Devices. Although the FDA has not made an official final decision in this regard, we currently understand that the Metabolic and Endocrine Drug Products Division will be the lead group and obtain consulting reviews from the other two FDA groups.

The testing and approval process requires substantial time, effort and financial resources. 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 Connecticut and the facilities of our insulin supplier and the supplier of our MedTone inhaler and cartridges are subject to federal registration and listing requirements and, if applicable, to state licensing requirements. Facilities are subject to inspection by the FDA and similar national agencies, as well as state and local authorities at any time. Failure, including those of our insulin and MedTone inhaler suppliers, to obtain and maintain applicable federal registration or state license, 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.

Business

It is not yet clear to what extent we will be subject to regulations governing medical devices separate from those governing drugs. After the FDA permits a device to enter commercial distribution, however, numerous regulatory requirements apply. 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. Failure to comply with these regulatory requirements could result in civil fines, product seizures, injunctions, and/or criminal prosecution of responsible individuals and us. Further, the company we have contracted to manufacture our MedTone inhaler and cartridges will be subject to the QSRs, which require 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 other national regulatory body that has the affect 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 they may change at any time that 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 others, 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, 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 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.

Business

Product development and approval within this regulatory framework 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.

Under European Union regulatory systems, marketing authorizations may be submitted either under a centralized or decentralized procedure. The centralized procedure provides for the grant of a single marketing authorization that is valid for all European Union member states. The decentralized procedure provides for mutual recognition of national approval decisions. Under this latter procedure, the holder of a national marketing authorization may submit an application to the remaining member states. Within 90 days of receiving the application and assessment report, each member state must decide whether to recognize approval. We plan to choose the appropriate route of European regulatory filing in an attempt to accomplish the most rapid regulatory approvals. However, the chosen regulatory strategy may not secure regulatory approvals or approvals of the chosen product indications. In addition, these approvals, if obtained, may take longer than anticipated.

We cannot assure you that any of our product candidates will prove to be safe or effective, will receive regulatory approvals, or will be successfully commercialized.

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, safe working conditions, manufacturing practices, environmental protection and fire hazard control. We may incur significant costs to comply with those laws and regulations now or in the future.

Patent restoration and marketing exclusivity

The Drug Price Competition and Patent Term Restoration Act of 1984, known as the Hatch-Waxman Act, permits the FDA to approve abbreviated NDAs, or ANDAs, for generic versions of innovator drugs and also provides certain patent restoration and exclusivity protections to innovator drug manufacturers. The ANDA process permits competitor companies to obtain marketing approval for a drug with the same active ingredient for the same uses as an innovator drug but does not require the conduct and submission of clinical studies demonstrating safety and efficacy for that product. Instead of safety and efficacy data, therefore, a competitor could make a copy of any of our drugs and only need to submit data demonstrating that the copy is bioequivalent to our product and gain marketing approval from the FDA.

Hatch-Waxman requires a competitor that submits an ANDA for a copy of one of our drugs or otherwise relies in part on data from one of our drugs regarding its safety and efficacy, to notify us of their application and potential infringement of our patent rights. Hatch-Waxman Act places certain timing requirements on us with respect to filing an infringement action against such an ANDA applicant, if we choose to do so.

While Hatch-Waxman Act provides competitors the ability to market copies of innovator products with the submission of significantly less clinical data, the Act also provides for the restoration of a portion of a product's patent term that is lost during a drug's clinical development and NDA review

Business

by the FDA. Hatch-Waxman also provides for a statutory protection, known as market exclusivity, which prohibits the FDA's approval or acceptance of certain competitor drug applications. Patent term restoration can return up to five years of patent term for a patent that covers a new product or its use to compensate for time lost during product development and the regulatory review process. This period is generally one-half the time between the effective date of an IND and the submission date of an NDA, plus the time between the submission date of an NDA and the approval of that application, subject to a maximum extension of five years and no extension can extend the total patent life beyond 14 years after the drug approval date. The application for patent term extension is subject to approval by the USPTO, in conjunction with the FDA. It takes at least six months to obtain approval of the application for patent term extension, and there can be no guarantee that the application will be granted.

Hatch-Waxman also provides for differing periods of statutory protection for new drugs approved under an NDA. Among the types of exclusivity are those for a "new molecular entity" and those for a new formulation or a new indication for a previously approved drug. MannKind's lead product, the Technosphere Insulin System is an innovative change to a previously approved product with the same active ingredient, insulin. Marketing exclusivity for the Technosphere Insulin System, if granted by the FDA, likely would prohibit the agency from approving another drug that relies, at least in part, on data regarding the safety and efficacy of our new formulation for that same active ingredient for three years. This three-year exclusivity, however, only covers the innovation associated with the NDA to which it attaches. Thus, the three-year exclusivity would not prohibit the FDA from approving applications for drugs containing the same active ingredient but without our new innovative change.

The FDA Modernization Act of 1997 included a pediatric exclusivity provision that was extended by the Best Pharmaceuticals for Children Act of 2002. Pediatric exclusivity is designed to provide an incentive to manufacturers for conducting research about the safety and efficacy of their products in children. Pediatric exclusivity, if granted, provides an additional six months of market exclusivity in the United States for new or currently marketed drugs, if certain pediatric studies requested by the FDA are completed by the applicant. To obtain this additional six months of exclusivity, it would be necessary for us to first receive a written request from the FDA to conduct pediatric studies and then to conduct the requested studies according to a previously agreed timeframe and submit the report of the study. There can be no assurances that we would receive a written request from the FDA and if so that we would complete the studies in accordance with the requirements for this six month exclusivity. The current pediatric exclusivity provision is scheduled to end on October 1, 2007 and there can be no assurances that it will be reauthorized.

EMPLOYEES

As of March 31, 2004, we had 223 full-time employees, all of whom are employed at-will. Seventy-three of these employees were engaged in research and development, 81 in manufacturing, 31 in clinical, regulatory affairs and quality assurance and 38 in administration, finance, management, information systems, corporate development and human resources. Thirty of our employees have a Ph.D. degree and/or M.D. degree and are engaged in activities relating to research and development, manufacturing, quality assurance and business development. None of our employees is subject to a collective bargaining agreement. We believe our relations with our employees are good.

Business

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.

The following are some of our scientific advisors and their primary affiliations:

Name	Primary affiliation
Harvey Cantor, M.D.	Professor of Pathology at Harvard Medical School
James J. Collins, D.Phil	Professor at Boston University
Alexander Fleming, M.D.	Chief Executive Officer of the Kinexum Corporation
Laurie Glimcher, M.D.	Member of the National Academy of Sciences and Professor of Immunology at Harvard Medical School
Edward S. Horton, M.D.	Chief of Clinical Research at the Joslin Diabetes Center
Thomas Kundig, M.D.	Professor at the University of Zurich
Harold E. Lebovitz, M.D.	Professor of Medicine and the Chief of Endocrinology Emeritus at the State University of New York — Brooklyn
Frederick Levy, Ph.D.	Associate Member of the Ludwig Institute for Cancer Research
Greg Petsko, Ph.D.	Professor at Brandeis University
Barrett Rollins, M.D., Ph.D.	Associate Professor of Medicine at Harvard Medical School
Jesse Roth, M.D.	Chief Geriatrician of the Long Island Jewish Medical Center
Jay S. Skyler, M.D.	Chief of Diabetes & Endocrinology at the University of Miami School of Medicine
Rolf Zinkernagel, M.D., Ph.D.	Nobel Laureate in Medicine and Institute Director at the University of Zurich

FACILITIES

In early 2001, we acquired a facility in Danbury, Connecticut to house our Technosphere-related activities, including development and manufacturing of Technosphere Insulin. This facility includes two buildings comprising approximately 187,000 square feet and currently house our research and development, administrative and manufacturing functions, including the Technosphere Insulin formulation, filling and packaging plant. We also lease approximately 20,000 square feet of laboratory space in Elmsford, New York for approximately \$36,000 per month, pursuant to an 11-year, renewable lease that expires in October 2004. We believe that our facility in Danbury has sufficient space to contain additional Technosphere Insulin manufacturing capacity necessary to satisfy potential commercial demand for our products for several years after we launch our Technosphere Insulin System and other Technosphere-related products.

We own and occupy approximately 120,000 square feet of laboratory, office and manufacturing space in Valencia, California. The facility contains our principal executive offices and houses our research

Business

and development laboratories for our cancer and other immunology programs. We also use this facility to provide support for the development of our Technosphere programs.

LEGAL PROCEEDINGS

We are not currently a party to any material legal proceedings. We may from time to time become a party to legal proceedings arising in the ordinary course of business.

WEBSITE

We maintain an Internet website at <http://www.mannkindcorp.com>. The information in, or that can be accessed through, our website is not incorporated into and does not form a part of this prospectus.

Management

EXECUTIVE OFFICERS AND DIRECTORS

The following table sets forth our current executive officers and directors and their ages as of March 31, 2004:

Name	Age	Position(s)
Alfred E. Mann	78	Chairman of the Board of Directors and Chief Executive Officer
Hakan S. Edstrom	54	President, Chief Operating Officer and Director
Richard L. Anderson	64	Corporate Vice President and Chief Financial Officer
Dan R. Burns	52	Corporate Vice President and President, MannKind BioPharmaceuticals
Wayman Wendell Cheatham, M.D., FACE	55	Corporate Vice President and Senior Vice President, Medical & Regulatory Affairs, MannKind BioPharmaceuticals
David Thomson, Ph.D., J.D.	37	Corporate Vice President, Associate General Counsel and Corporate Secretary
Kathleen Connell, Ph.D.(1)(2)(3)	56	Director
Ronald Consiglio(2)(3)	60	Director
Michael Friedman, M.D.(1)(2)	60	Director
Llew Keltner, M.D., Ph.D.	54	Director
Kent Kresa	66	Director
David H. MacCallum(3)	66	Director

(1) *Member of the Compensation Committee.*

(2) *Member of the Nominating and Corporate Governance Committee.*

(3) *Member of the Audit Committee.*

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 and its successor, Siemens Pacesetter, a manufacturer of cardiac pacemakers. Since 1993, Mr. Mann has served as Chairman and Co-Chief Executive Officer of Advanced Bionics Corporation, a medical device manufacturer that has entered into an agreement to be acquired by Boston Scientific Corporation. Mr. Mann holds a bachelor's and master's degree in Physics from the University of California at Los Angeles, honorary doctorates from Johns Hopkins University, the University of Southern California and Western University 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 is currently a director of Q-Med AB, a biotechnology and medical device company, and Ixion Biotechnology, Inc.,

Management

a biotechnology company. Mr. Edstrom was educated in Sweden and holds a master's degree in Business Administration from the Stockholm School of Economics.

Richard L. Anderson has been our Corporate Vice President and Chief Financial Officer since October 2002. He was previously Senior Vice President, Chief Financial Officer and Secretary at NeoRx Corporation, a Seattle-based publicly traded biotechnology company. From January 1997 to September 2002, Mr. Anderson held various executive positions at NeoRx, including President, Chief Operating Officer and Senior Vice President, Finance and Operations. Mr. Anderson holds a master's degree in Management from Johns Hopkins University, a master's degree in Solid State Physics from the University of Maryland and a bachelor's degree in Physics from Bucknell University.

Dan R. Burns has been our Corporate Vice President and President of MannKind BioPharmaceuticals, which is our Danbury, Connecticut operation, since September 2002. Prior to joining us, he served as Chief Executive Officer of Trophix Pharmaceuticals, Inc., a pharmaceutical company in 1997, and from 1998 to 1999 he served as Chief Executive Officer of ProScript, Inc., a biopharmaceutical company. From 2000 to 2002, he served as Chief Executive Officer of HealthTalk Interactive, a pharmaceutical services firm. Mr. Burns has held senior executive positions internationally and domestically with Bristol Myers Squibb. Mr. Burns holds degrees in Psychology and Business Administration from McMaster University and Mohawk College.

Wayman Wendell Cheatham, M.D., FACE has been our Corporate Vice President and Senior Vice President, Medical & Regulatory Affairs of MannKind BioPharmaceuticals since August 2002. From April 1999 to August 2002, he was Vice President of Medical & Regulatory Affairs for Takeda Pharmaceuticals North America, Inc., a manufacturer of ethical pharmaceuticals. From August 1996 to April 1999, Dr. Cheatham served as Director of Medical Affairs for Novo Nordisk Pharmaceuticals, Inc., a manufacturer of pharmaceutical preparations. Dr. Cheatham received his M.D. degree from the Pennsylvania State University College of Medicine in 1975. Dr. Cheatham has also been nominated to serve as a member of the board of directors of the American Diabetes Association beginning June 2004.

David Thomson, Ph.D., J.D. has been our Corporate Vice President, Associate General Counsel and Corporate Secretary since January 2002. Prior to joining us, he practiced corporate/commercial and securities law at the Toronto law firm of Davies Ward Phillips & Vineberg LLP from May 1999 through December 2001, except for a period from May to December 2000, when he served as Vice President, Business Development for CTL ImmunoTherapies Corp. From March 1994 to August 1996, Dr. Thomson held a post-doctoral position at the Rockefeller University, where he conducted medical research in the Laboratory of Neurophysiology. 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.

Kathleen Connell, Ph.D. has been one of our directors since November 2003. Currently, Dr. Connell is president of Connell Group, an investment advisory firm and teaches international finance at the UC Berkeley Haas School of Business. From 1995 to 2002, she served as State Controller of California. Her prior experience includes serving as a president of a NASD-registered investment banking firm, as vice-president of a New York-based bank and as the founder and Chair of the UCLA Center for Finance and Real Estate at the John E. Anderson School of Management, where she taught for five years. Dr. Connell holds a Ph.D. degree from the University of California, Los Angeles.

Ronald Consiglio has been one of our directors since October 2003. Since 1999, Mr. Consiglio has been the managing director of Synergy Trading, a securities-trading partnership. From 1999 to 2001, Mr. Consiglio was Executive Vice President and Chief Financial Officer of Trading Edge, Inc., a national automated bond-trading firm. His prior experience includes serving as Senior Vice President and Chief Financial Officer of Cantor Fitzgerald & Co. and as a member of its board of directors.

Management

Mr. Consiglio is currently a member of the board of directors of Natrol, Inc, a manufacturer of dietary supplements and a trustee on the board of directors of Metropolitan West Trust, a management investment company. Mr. Consiglio holds a bachelor's degree in Accounting from California State University at Northridge.

Michael Friedman, M.D. has been one of our directors since December 2003. Currently, Dr. Friedman is the President and Chief Executive Officer of the City of Hope National Medical Center. Previously, from September 2001 until April 2003, Dr. Friedman held the position of Senior Vice President of Research and Development, Medical and Public Policy, for Pharmacia Corporation and, from July 1999 until September 2001, was a Senior Vice President of Searle, a subsidiary of Monsanto Company. From 1995 until June 1999, Dr. Friedman served as Deputy Commissioner for Operations for the FDA, and was Acting Commissioner and Lead Deputy Commissioner from 1997 to 1998. Dr. Friedman holds a bachelor's degree, magna cum laude, from Tulane University, New Orleans, Louisiana, and a doctorate in medicine from the University of Texas, Southwestern Medical School.

Llew Keltner, M.D., Ph.D. has been one of our directors since October 2003. He founded EPISTAT, an international pharmaceutical and health care strategy company and has served as its Chief Executive Officer since 1985. He has also served as Chief Executive Officer of MetaStat, an oncology drug development firm, since 1994. In addition, Dr. Keltner is Chairman of Light Sciences Corporation, a company developing light-activated drugs. Dr. Keltner is currently on the board of directors of Infostat, Inc., a contract research organization, Oregon Life Sciences, a venture investment company focused on the bio-med and biotech sectors, LKHealthnet Inc., a company that acquires healthcare network assets, and Goodwell Technologies, Inc., a provider of real-time communications and collaboration services in the health care, financial, travel and lodging and other industries. Dr. Keltner holds a master's degree in Epidemiology and Biostatistics, a Ph.D. degree in Biomedical Informatics and a medical degree from Case Western Reserve University.

Kent Kresa has been one of our directors since June 2004. Currently, Mr. Kresa is Chairman Emeritus of Northrop Grumman Corporation and from September 1990 until October 2003, he was its Chairman. He also served as Chief Executive Officer of Northrop Grumman Corporation from January 1990 until March 2003 and as its president from 1987 until September 2001. Mr. Kresa serves on the boards of Avery Dennison Corporation, Eclipse Aviation Corporation, Fluor Corporation, General Motors Corporation, and several non-profit organizations and universities. He is also a senior advisor for The Carlyle Group and on the Advisory Board of Trust Company of the West. As a graduate of M.I.T., he received a B.S. in 1959, an M.S. in 1961, and an E.A.A. in 1966, all in Aeronautics and Astronautics.

David H. MacCallum has been one of our directors since June 2004. Currently, Mr. MacCallum is the Managing Partner of Outer Islands Capital, a hedge fund specializing in health care investments. From June 1999 until November 2001, he was Global Head of Health Care investment banking for Salomon Smith Barney, part of Citigroup. Prior to joining Salomon Smith Barney, he was Executive Vice President and Head of the Health Care group at ING Barings Furman Selz LLC, an investment banking firm and subsidiary of ING Group, a Dutch financial institution, from April 1998 to June 1999. Prior to that Mr. MacCallum formed the Life Sciences group at UBS Securities LLC, an investment banking firm, where he was Managing Director and Global Head of Life Sciences from May 1994 to April 1998. Before joining UBS Securities LLC, he founded the health care practice at Hambrecht & Quist, an investment banking firm, where he was Head of Health Care and Co-Head of Investment Banking. Mr. MacCallum received an A.B. degree from Brown University and an M.B.A. degree from New York University. He is a Chartered Financial Analyst.

Management

BOARD COMPOSITION

Our business and affairs are managed under the direction of our board of directors. The primary responsibilities of our board of directors are to provide oversight, strategic guidance, counseling and direction to our management. Our board of directors meets regularly on a quarterly basis and additionally as required. Written board materials are distributed in advance of meetings as a general rule, and our board of directors schedules meetings with and presentations from members of our senior management on a regular basis.

Our board of directors consists of eight members, two of which are employees of ours. Five of these directors, Dr. Connell, Mr. Consiglio, Dr. Friedman, Mr. Kresa and Mr. MacCallum are independent directors, as defined by Rule 4200(a)(14) of the National Association of Securities Dealers.

In accordance with the terms of our amended and restated certificate of incorporation and bylaws, upon the completion of this offering, the term of each director then serving shall expire at the next annual meeting of stockholders, at which time the newly elected directors shall serve from the time of election and qualification until the following annual meeting of stockholders and until their successors are duly elected and qualified.

Our amended and restated certificate of incorporation provides that the authorized number of directors may be changed only by resolution of the board of directors. Our directors may be removed for cause by the affirmative vote of the holders of a majority of our voting stock and may be removed without cause by the affirmative vote of the holders of at least two-thirds of our voting stock.

Over the past year, our board of directors has devoted considerable time to further improving our governance by addressing the rules promulgated under the Sarbanes-Oxley Act of 2002 and the proposals and requirements of Nasdaq. In connection with such activities, our board of directors has evaluated its role and function, and examined the following, among other things:

- board and board committee meeting schedules;
- board committee governance and composition; and
- the size and composition of our board of directors and director independence.

As a result of its evaluation and recent corporate governance rules enacted under the Sarbanes-Oxley Act of 2002 and Nasdaq, our board of directors has:

- revised the charter of our audit committee of the board;
- created a separate compensation committee and a nominating and corporate governance committee of the board;
- approved the audit committee's formation of a disclosure committee;
- adopted a code of business conduct and ethics governing our employees, officers and directors to promote high standards of integrity by conducting our affairs in an honest and ethical manner; and
- adopted a policy of non-retaliation and a procedure for reporting complaints to protect our employees against unlawful retaliation as a result of their lawful, good-faith reporting of violations of federal or state law or our code of business conduct and ethics by us or any of our agents.

BOARD COMMITTEES

Our board of directors has an audit committee, compensation committee and nominating and corporate governance committee, each of which has the composition and responsibilities described

Management

below. Our board of directors is responsible for determining the composition of the members of these key committees.

Audit committee

Our audit committee consists of Mr. Consiglio (chair), Dr. Connell and Mr. MacCallum, each of whom is an independent member of our board of directors. The functions of this committee include, among others:

- evaluating the independent registered public accounting firm's qualifications, independence and performance;
- determining the engagement of the independent registered public accounting firm;
- approving the retention of the independent registered public accounting firm to perform any proposed permissible non-audit services;
- monitoring the rotation of partners of the independent registered public accounting firm on our engagement team as required by law;
- reviewing our financial statements;
- reviewing our critical accounting policies and estimates;
- discussing with management and the independent registered public accounting firm the results of the annual audit and the review of our quarterly financial statements; and
- reviewing and evaluating, at least annually, the performance of the audit committee and its members, including compliance of the audit committee with its charter.

We have appointed Mr. Consiglio as our audit committee financial expert. Both our independent registered public accounting firm and internal financial personnel regularly meet privately with our audit committee and have unrestricted access to this committee.

Compensation committee

Our compensation committee consists of Dr. Friedman (chair) and Dr. Connell, each of whom is an independent member of our board of directors. The functions of this committee include, among others:

- reviewing and recommending policy relating to compensation and benefits of our officers and employees, including reviewing and approving corporate goals and objectives relevant to compensation of our chief executive officer and other senior officers, evaluating the performance of these officers in light of those goals and objectives, and setting compensation of these officers based on such evaluations;
- administering our benefit plans and the issuance of stock options and other awards under our stock plans;
- reviewing and establishing appropriate insurance coverage for our directors and executive officers;
- recommending the type and amount of compensation to be paid or awarded to members of our board of directors, including consulting, retainer, meeting, committee and committee chair fees and stock option grants or awards;
- reviewing and approving the terms of any employment agreements, severance arrangements, change-of-control protections and any other compensatory arrangements for our executive officers; and

Management

- reviewing and evaluating, at least annually, the performance of the compensation committee and its members, including compliance of the compensation committee with its charter.

Nominating and corporate governance committee

Our nominating and corporate governance committee consists of Dr. Connell (chair), Dr. Friedman and Mr. Consiglio, each of whom is an independent member of our board of directors. The functions of this committee include, among others:

- planning for succession with respect to the position of CEO and other senior executives;
- reviewing and recommending nominees for election as directors;
- assessing the performance of the board of directors and monitoring committee evaluations;
- suggesting, as appropriate, ad-hoc committees of the board of directors;
- developing guidelines for board composition; and
- reviewing and evaluating, at least annually, the performance of the nominating and corporate governance committee and its members, including compliance of the nominating and corporate governance committee with its charter.

COMPENSATION COMMITTEE INTERLOCKS AND INSIDER PARTICIPATION

Prior to establishing our compensation committee, our board of directors as a whole made decisions relating to compensation of our executive officers. Drs. Glen Nelson, Donald Drakeman and Edward L. Korwek, former directors, served on our compensation committee in 2002 and 2003. During 2002 and 2003, none of our executive officers served as a member of the board of directors or compensation committee of any other entity that had one or more executive officers who served on our board of directors or compensation committee.

DIRECTOR COMPENSATION AND REIMBURSEMENT

Each of Messrs. Consiglio and Keltner and Drs. Connell and Friedman was granted an option to purchase 10,000 shares of our common stock under our 2004 equity plan effective upon joining our board. These options vest over three years. Effective upon the closing of this offering, all of our non-employee directors will receive an option to purchase 30,000 shares of our common stock as well as annual grants to purchase 10,000 shares of our common stock under the 2004 Non-Employee Directors' Stock Option Plan, which is described elsewhere in this prospectus. Each of our non-employee directors receive an annual retainer of \$15,000. Each non-employee director who serves as a committee chair receives an additional retainer of \$2,000 per year. In addition, we reimburse our non-employee directors for their expenses incurred in connection with attending board and committee meetings, and these directors receive \$1,500 for each meeting of the board attended in person, \$750 for each telephonic board meeting attended and \$750 for each meeting of a committee attended in person or by phone. See also "Certain relationships and related transactions—Other transactions."

EXECUTIVE COMPENSATION

Summary compensation table

The following table provides information for the fiscal year ended December 31, 2003, regarding compensation awarded to, earned by or paid to our chief executive officers, each of our four other most highly compensated executive officers whose combined salary and bonus for 2003 exceeded \$100,000 and an additional individual for whom disclosures would have been provided but for the

Management

fact that the individual was not serving as an executive officer at the end of 2003. We refer to the individuals listed in the table below as our “named executive officers” elsewhere in this prospectus.

Name and principal position(s)	Annual compensation(1)		Long-term compensation	All other compensation
	Salary	Bonus	securities underlying options	
Alfred E. Mann Chief Executive Officer and Chairman of the Board of Directors	\$100,000	\$ —	240,971	\$ —
Michael G. Page Former Chief Executive Officer and Director	350,015(2)	—	88,001	166,385(3)
Solomon S. Steiner Former Senior Vice President, Technology and Director	36,676(4)	—	171,137	452,148(4)
Hakan S. Edstrom President, Chief Operating Officer and Director	322,115	87,000	333,205	—
Dan R. Burns Corporate Vice President and President, MannKind BioPharmaceuticals	273,963	—	133,333	44,731(5)
Richard L. Anderson Corporate Vice President and Chief Financial Officer	280,288	—	116,666	59,950(6)
David Thomson Corporate Vice President, Associate General Counsel and Corporate Secretary	223,269	63,000	109,095	37,842(7)

- (1) In accordance with the rules of the SEC, the compensation described in this table does not include medical, group life insurance or other benefits which are available generally to all of our salaried employees and certain perquisites and other personal benefits received which do not exceed the lesser of \$50,000 or 10% of any named executive officer’s salary and bonus disclosed in this table.
- (2) In October 2003, Dr. Michael Page’s employment with us terminated. In accordance with the terms of his severance agreement, we are obligated to pay Dr. Page his base salary at the rate of \$330,000 per year for up to 18 months.
- (3) In connection with Dr. Page’s resignation, he received a severance payment of \$165,000. Also includes \$1,385 in auto allowance.
- (4) In February 2003, Dr. Solomon Steiner’s employment with us terminated. In accordance with the terms of his settlement agreement, we were obligated to pay Dr. Steiner approximately \$1,049,288 over three years, comprised of \$775,365 in deferred compensation from prior years and the remainder comprised of other severance-related items. In 2003, we paid his base salary through February. Additionally, we paid \$258,455 in deferred compensation, \$192,655 in severance-related items and \$1,038 in auto allowance.
- (5) Includes \$35,731 in temporary housing reimbursements and \$9,000 in auto allowance.
- (6) Includes \$50,546 in relocation reimbursements and \$9,404 in auto allowance. Does not include compensation related to an amount loaned to Mr. Anderson, which has been subsequently repaid, or an amount paid to Mr. Anderson for the purchase of his residence, by a limited liability company that is not owned or controlled by us but is controlled by Mr. Mann. See Note 7 to the financial statements for further information.
- (7) Includes \$28,842 in relocation reimbursements and \$9,000 in auto allowance. Does not include compensation related to an amount loaned to Mr. Thomson, which has been subsequently repaid, by a limited liability company that is not owned or controlled by us but is controlled by Mr. Mann. See Note 7 to the financial statements for further information.

Stock option grants in 2003

On October 7, 2001, our board of directors adopted, and our stockholders approved, our 2001 Stock Awards Plan. On March 23, 2004, our board of directors adopted, and our stockholders approved, an amendment and restatement to this plan to become effective upon the closing of this offering. We refer to this plan as the 2004 equity plan, both before and after the effective date of the amendment and restatement. All options granted prior to the closing of this offering are governed by the terms of the

Management

2004 equity plan prior to its amendment and restatement. In 2003, we granted options to purchase a total of 1,664,886 shares of our common stock, with a weighted average exercise price of \$9.36 per share, to our employees, including grants to our named executive officers. This total includes 781,572 options issued under the repricing program in exchange for 781,572 outstanding options that were tendered into the program for cancellation. All options granted to our named executive officers are nonstatutory stock options that do not qualify as incentive stock options within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended, or the Code. Under the terms of our 2004 Equity Incentive Plan, any options to purchase shares of our common stock that expire or are otherwise terminated are returned to the option pool and become available for future grant under the plan. Options expire ten years from the date of grant. See “Employee benefit plans—2004 Equity Incentive Plan.”

The exercise price per share of each option granted to our named executive officers was equal to the fair market value or 85% of the fair market value of our common stock as determined by our board of directors on the date of the grant. The exercise price is payable in cash, by promissory note, shares of our common stock previously owned by the optionee or pursuant to the net exercise of the option. In determining the fair market value of the stock granted on the grant date, our board of directors considered many factors, including:

- our absolute and relative levels of revenues and other operating results;
- the fact that our options involved illiquid securities in a nonpublic company;
- prices of preferred stock issued by us to outside investors in arm’s-length transactions;
- the rights, preferences and privileges of our preferred stock over our common stock; and
- the likelihood that our common stock would become liquid through an initial public offering, a sale of us or another event.

Management

Options granted in 2003

The following table provides information concerning grants of options to purchase shares of our common stock under our 2004 equity plan to our named executive officers in 2003. No stock appreciation rights covering our common stock were granted to our named executive officers in 2003.

Name	Number of securities underlying options granted	Percentage of total options granted to employees in fiscal year(1)	Exercise or base price per share	Expiration date	Potential realizable value at assumed annual rates of stock price appreciation for option term(2)	
					5%	10%
					(in thousands)	
Alfred E. Mann	—	—%	\$ —	—	\$ —	\$ —
Michael G. Page	83,333	5.0	12.75	4/7/05	241	385
Solomon S. Steiner	—	—	—	—	—	—
Hakan S. Edstrom	233,206(3)	14.0	7.95	11/5/07	2,114	2,926
	100,000	6.0	7.95	11/20/13	1,485	2,836
Dan R. Burns	83,333(3)	5.0	7.95	11/5/07	756	1,046
	50,000	3.0	7.95	11/20/13	743	1,418
Richard L. Anderson	83,333(3)	5.0	7.95	11/5/07	756	1,046
	33,333	2.0	7.95	11/20/13	495	945
David Thomson	50,000(3)	3.0	7.95	11/5/07	453	627
	50,000	3.0	7.95	11/20/13	743	1,418

- (1) Based on 1,664,886 options granted during the fiscal year ended December 31, 2003 under our 2004 equity plan, including grants to executive officers.
- (2) Potential realizable values are computed by (a) multiplying the number of shares of common stock subject to a given option by an assumed public offering price of \$14.00 per share, (b) assuming that the aggregate stock value derived from that calculation compounds at the annual 5% or 10% rate shown in the table for the entire term of the option and (c) subtracting from that result the aggregate option exercise price. The 5% and 10% assumed annual rates of stock price appreciation are mandated by the rules of the SEC and do not represent our estimate or projection of future common stock prices.
- (3) Represents the replacement, pursuant to our option re-pricing program, of options granted in an earlier year.

Aggregated option exercises during 2003 and fiscal year-end option values

The following table provides information concerning options granted under our equity plans that were exercised during 2003, and unexercised options granted under all of our stock plans held as of December 31, 2003 by each of our named executive officers.

The value realized and the value of unexercised in-the-money options at December 31, 2003 are based on an assumed initial public offering price of \$14.00 per share, less the per share exercise price, multiplied by the number of shares subject to the option, without taking into account any taxes that

Management

may be payable in connection with the transaction. Options outstanding as of December 31, 2003 may not be exercised prior to vesting.

Name	Shares acquired on exercise	Value realized	Number of securities underlying unexercised options at fiscal year-end		Value of unexercised in-the-money options at fiscal year-end	
			Exercisable	Unexercisable	Exercisable	Unexercisable
					(in thousands)	
Alfred E. Mann	—	—	60,243	180,729	\$ —	\$ —
Michael G. Page	—	—	88,001	—	104	—
Solomon S. Steiner	—	—	171,138	—	1,328	—
Hakan S. Edstrom	—	—	—	333,206	—	2,016
Dan R. Burns	—	—	—	133,333	—	807
Richard L. Anderson	—	—	—	116,666	—	706
David Thomson	—	—	6,821	102,273	28	614

EMPLOYEE BENEFIT PLANS**1991 Stock Option Plan**

On March 15, 1991, our board of directors adopted, and our stockholders approved, our 1991 Stock Option Plan, or the 1991 plan. The 1991 plan was terminated pursuant to its own terms on March 15, 2001. As of May 31, 2004, options to purchase 126,099 shares of our common stock were outstanding under the 1991 plan. We will not grant additional equity awards under the 1991 plan.

Share reserve. Except with respect to the outstanding options referenced above, no shares of our common stock remain reserved or available for issuance under the 1991 plan.

Administration. Our board of directors administers the 1991 plan, but the board may delegate authority to administer the 1991 plan to a committee of three or more members of the board who qualify under the terms of the 1991 plan. Subject to the terms of the 1991 plan, the plan administrator has authority to construe and interpret the 1991 plan and to determine the option recipients, grant dates, numbers and types of options granted and the terms and conditions of the options, including the period of their exercisability and vesting. The plan administrator also has authority to make adjustments upon changes in capitalization.

Eligibility of awards. The 1991 plan provided for the grant of incentive stock options, or ISOs and nonstatutory stock options, or NSOs, only to our employees. ISOs are subject to section 422 of the Internal Revenue Code of 1986, as amended, or the Code.

Stock options. Stock options were granted under the 1991 plan pursuant to a stock option agreement. All outstanding options granted under the 1991 plan are now fully vested. In general, the term of stock options granted under the 1991 plan may not exceed ten years. Unless an optionee's stock option agreement provides otherwise, if an optionee's service with us terminates for any reason other than death, the optionee may exercise any vested option for up to three months following the termination of service. However, in the event the optionee is an employee of ours and is terminated for cause, all options held by the optionee under the 1991 plan immediately expire and cease to be exercisable.

Shares of common stock subject to options granted under the 1991 plan may be paid for only in cash consideration.

Transferability. Generally, options granted under the 1991 plan are not assignable or transferable, other than by will or the laws of descent and distribution. During the life of the optionee, all rights

Management

granted to the optionee under the 1991 plan or under any agreement shall be exercisable only by the optionee.

Additional provisions. Our board of directors has the authority to amend outstanding options granted under the 1991 plan, except that no amendment may adversely affect an optionee without the optionee's written consent.

The 1991 plan provides that we will use our best efforts to cause a registration statement with respect to the common stock issuable under the 1991 plan to be filed within 18 months after we become a publicly reporting company.

1999 Stock Plan

On October 15, 1999, our board of directors adopted, and our stockholders approved, our 1999 Stock Plan, or the 1999 plan. As of May 31, 2004, awards to purchase 305,430 shares of our common stock were outstanding under the 1999 plan. The 1999 plan has been terminated and we will not grant additional equity awards under the 1999 plan.

Share reserve. Except with respect to the outstanding options referenced above, no shares of our common stock remain reserved or available for issuance under the 1999 plan.

Administration. Our board of directors administers the 1999 plan, but the board may delegate authority to administer the 1999 plan to a committee consisting of two or more non-employee directors. The board may adopt, amend and rescind rules and regulations relating to the 1999 plan and may interpret and construe the 1999 plan. Subject to the terms of the 1999 plan, the plan administrator will determine which persons meet the requirements for eligibility, grant dates, the numbers and types of stock awards to be granted and the terms and conditions of the stock awards. Also subject to the limitations set forth in the 1999 plan, the administrator may make appropriate adjustments upon changes to our common stock to the number and type of shares or other securities that may be acquired pursuant to awards granted under the 1999 plan.

Eligibility of awards. The 1999 plan provided for the grant of ISOs, NSOs, stock sales, stock bonuses, restricted stock, reload stock options, stock purchase warrants, other rights to acquire stock, securities convertible into or redeemable for stock, stock appreciation rights, limited stock appreciation rights, phantom stock, dividend equivalents, performance units, performance shares and other awards. All of our directors, employees, consultants or advisers were eligible to be considered for the above awards.

Stock Options. Stock options were granted under the 1999 plan pursuant to a stock option agreement. Common stock may be issued under the 1999 plan for any lawful consideration as determined by the committee, including services rendered by the recipient. The term of options granted under the 1999 plan is for no more than ten years from the date the option was granted. Unless an optionee's stock option agreement provides for earlier termination, if an optionee's service relationship with us terminates due to disability or death, the optionee, or his or her beneficiary, generally may exercise any vested options for up to six months after the date of termination. If an optionee's relationship with us ceases for any reason other than disability or death, the optionee may exercise any vested options for up to thirty days after the date of termination.

Additional provisions. The board of directors has the authority to amend or terminate the 1999 plan provided that no such amendment or termination deprives the recipient of any award granted under the 1999 plan, without consent of such recipient, of any of his or her rights.

Upon certain changes in our control, all awards under the 1999 plan will vest in full and be exercisable prior to the effectiveness of such transaction. The committee may also accelerate the vesting

Management

or exercisability of any award under the 1999 plan. In no event could any grantee receive, in any fiscal year, awards which exceeded an aggregate of 500,000 shares of our common stock.

Non-employee director options. The 1999 plan included provisions for the automatic grant of options to non-employee directors. Such provisions have never been put into effect and will not be used in the future.

AlleCure Corp. 2000 Stock Option and Stock Plan and CTL ImmunoTherapies Corp. 2000 Stock Option and Stock Plan

In connection with the acquisition by us of AlleCure Corp. and CTL ImmunoTherapies Corp. on December 12, 2001, we assumed all of the outstanding options granted under the AlleCure Corp. 2000 Stock Option and Stock Plan, or the AlleCure plan, and the CTL ImmunoTherapies Corp. 2000 Stock Option and Stock Plan, or the CTL plan. Subsequent to the acquisition, these options were adjusted to cover shares of our common stock at the exchange ratios set forth in the applicable merger agreements. As of May 31, 2004, options to purchase an aggregate of 120,347 shares of our common stock under the AlleCure plan and the CTL plan were outstanding. The AlleCure plan and CTL plan were terminated and we will not grant additional equity awards under the AlleCure plan or the CTL plan, collectively known as the 2000 plans.

Share Reserve. Except with respect to the outstanding options referenced above, no shares of our common stock remain reserved or available for issuance under the 2000 plans.

Administration. Pursuant to the merger, our board of directors administers the 2000 plans, but the board may delegate authority to administer the 2000 plans to a committee that complies with applicable law. Our board of directors has broad authority to administer the 2000 plans.

Eligibility of awards. The 2000 plans provided for the grant of ISOs, NSOs and stock purchase rights to employees, directors and consultants.

Stock Options. Stock options were granted under the 2000 plans pursuant to a stock option agreement. Options granted under the 2000 plans have a maximum term of ten years and vest at the rate specified in the option agreements. Except in the case of options granted to officers, directors, and consultants, options become exercisable at a rate of no less than 20% per year over five years from the date the options were granted.

Acceptable consideration for the purchase of common stock issued pursuant to options granted under the 2000 plans includes cash, common stock previously owned by the optionee, a promissory note or consideration received through a cashless exercise program.

Generally, options under the 2000 plans may not be sold, pledged, assigned, hypothecated, transferred or disposed of in any manner other than by will or by laws of descent and distribution and may be exercised, during the lifetime of the optionee, only by the optionee.

Unless an optionee's stock option agreement provides for earlier termination, if an optionee's service relationship with us terminates due to disability or death, the optionee, or his or her beneficiary, generally may exercise any vested options for up to twelve months after the date the service relationship ends. If an optionee's relationship with us ceases for any reason other than disability or death, the optionee may exercise his or her option within the time specified in the option agreement, or if not specified, for three months. In no event may an option be exercised after the expiration of the term of the option set forth in the option agreement.

The administrator may at any time offer to buy out for a payment in cash or shares, an option previously granted, based on such terms and conditions as the administrator may establish and communicate to the optionee at the time such offer is made.

Management

Stock Purchase Rights. Unless the administrator determines otherwise, a restricted stock purchase agreement grants us a repurchase option exercisable upon the voluntary or involuntary termination of the purchaser's service with us for any reason (including death or disability). The purchase price for shares repurchased pursuant to the restricted stock purchase agreement is the original price paid by the purchaser and may be paid by cancellation of any indebtedness of the purchaser. The repurchase option lapses at such rate as the administrator may determine. Except with respect to shares purchased by officers and directors, the repurchase option lapses at a rate of no less than 20% per year over five years from the date of purchase.

Corporate transactions or changes in control. Our board of directors will make appropriate adjustments for a stock split, reverse stock split, stock dividend, combination or reclassification of the stock, or any other increase or decrease in the number of issued shares of common stock effected without receipt of consideration by the company.

In the event of the proposed dissolution or liquidation of the company, the administrator shall notify each optionee as soon as practicable prior to the effective date of such proposed transaction. The administrator in its discretion may provide for an optionee to have the right to exercise his or her option or stock purchase right until fifteen days prior to such transaction as to all of the optioned stock covered thereby, including shares as to which the option or stock purchase right would not otherwise be exercisable. In addition, the administrator may provide that any company repurchase option applicable to any shares purchased upon exercise of an option or stock purchase right shall lapse as to all such shares, provided the proposed dissolution or liquidation takes place at the time and in the manner contemplated. To the extent it has not been previously exercised, an option or stock purchase right will terminate immediately prior to the consummation of such proposed action.

In addition, in the event we merge or sell all or substantially all of our assets, all outstanding stock awards under the 2000 plans will be assumed, continued or substituted for by any surviving or acquiring entity. If the surviving or acquiring entity elects not to assume, continue or substitute for these awards, each participant will be given notice of the transaction and permitted to exercise all outstanding awards held under the 2000 plans for a period of fifteen days after notice is provided. To the extent it has not been previously exercised, an option or stock purchase right will terminate at the end of such period.

Additional provisions. Our board of directors has the authority to amend outstanding awards granted under the 2000 plans, except that no amendment may adversely affect an award without the recipient's written consent. Our board of directors has the power to amend the 2000 plans. We are required to provide annual financial statements to participants in the 2000 plans.

2004 Equity Incentive Plan

On October 7, 2001, our board of directors adopted, and our stockholders approved, our 2001 Stock Awards Plan. On March 23, 2004, our board of directors adopted, and our stockholders approved, an amendment and restatement of the 2001 Stock Awards Plan to become effective upon the closing of this offering. We refer to this plan as the 2004 plan, both before and after the effective date of the amendment and restatement. All awards granted under the 2004 plan prior to the closing of this offering will continue to be governed by the terms of the 2004 plan prior to its amendment and restatement. All awards granted under the 2004 plan after the closing of this offering will be governed by the terms of the 2004 plan as amended and restated. The material differences between the terms of options granted under the 2004 plan prior to and following this offering are identified below.

Share reserve. An aggregate of 3,659,926 shares of our common stock are reserved for issuance under the 2004 plan. Shares subject to options and stock awards that expire, terminate, are repurchased or are forfeited under the 2004 plan will again become available for the grant of awards

Management

under the 2004 plan. Shares issued under the 2004 plan may be previously unissued shares or reacquired shares bought on the market or otherwise. If any shares subject to a stock award are not delivered to a participant because such shares are withheld for the payment of taxes or the stock award is exercised through a “net exercise,” the number of shares that are not delivered to the participant shall remain available for the grant of awards under the 2004 plan. If the exercise of any stock award is satisfied by tendering shares of common stock held by the participant, the number of shares tendered shall become available for the grant of awards under the 2004 plan. The maximum number of shares that may be issued under the 2004 plan subject to incentive stock options is 7,000,000.

As of May 31, 2004, options to purchase 1,340,074 shares of our common stock subject to the terms of the 2004 plan prior to its amendment and restatement were outstanding. As of the date hereof, no shares of our common stock have been issued under the terms of the 2004 plan as amended and restated. The 2004 plan prior to its amendment and restatement provided for multiple forms of equity awards, but only options were granted by our board of directors.

Administration. Our board of directors will administer the 2004 plan, but the board may delegate authority to administer the 2004 plan to a committee of one or more members of the board. Subject to the terms of the 2004 plan, the plan administrator will determine the stock award recipients and grant dates, the numbers and types of stock awards to be granted under the 2004 plan and the terms and conditions of the stock awards, including the period of their exercisability and vesting. Subject to the limitations set forth below, the plan administrator will also determine the exercise price, purchase price or strike price, as applicable, for stock awards granted under the 2004 plan.

Eligibility of awards. The 2004 plan provides for the grant of ISOs, NSOs, restricted stock awards, stock appreciation rights, phantom stock awards and other stock awards based in whole or in part by reference to our common stock. ISOs may be granted solely to our employees, including officers. All other stock awards under the 2004 plan may generally be granted to our employees, directors, officers and consultants.

Stock options. Stock options are granted under the 2004 plan pursuant to a stock option agreement. Generally, the exercise price for an ISO cannot be less than 100% of the fair market value of the common stock subject to the option on the date of grant. The exercise price for an NSO is determined by our board of directors. Options granted under the 2004 plan vest at the rate specified in the stock option agreement. In addition, following this offering, our 2004 plan will allow for the early exercise of options, as set forth in an applicable stock option agreement. All shares of our common stock acquired through options exercised early may be subject to repurchase by us. Options granted under the 2004 plan prior to its amendment and restatement must vest at the rate of at least 20% per year and may not be exercised early.

In general, the term of stock options granted under the 2004 plan may not exceed ten years. With respect to options granted under the 2004 plan following this offering, unless the terms of an optionee’s stock option agreement provide for earlier termination, if an optionee’s service relationship with us, or any affiliate of ours, terminates due to disability, death or retirement, the optionee, or his or her beneficiary, generally may exercise any vested options after the date the service relationship ends for up to twelve months in the event of disability, up to eighteen months in the event of death and up to twenty-four months in the event of selected retirements. If an optionee’s relationship with us, or any affiliate of ours, ceases for any reason other than disability, death or retirement, the optionee may exercise any vested options for up to three months after the termination of service, unless the terms of the stock option agreement provide for earlier termination. However, in the event the optionee’s service with us, or an affiliate of ours, is terminated for cause (as defined in the 2004 plan), all options held by the optionee under the 2004 plan will terminate in their entirety on the date of termination.

Management

With respect to options granted under the 2004 plan prior to this offering, if an optionee's service with us is terminated due to disability or death, the optionee, or his or her beneficiary, may exercise any vested options for up to six months after the date of termination. If an optionee's service with us is terminated for any reason other than disability or death, the optionee may exercise any vested options for up to thirty days after the date of termination. However, in the event an optionee's service with us is terminated for cause under the terms of the 2004 plan, all options held by the optionee under the 2004 plan will terminate on the date of termination.

Acceptable consideration for the purchase of our common stock issued under the 2004 plan will be determined by our board of directors and may include cash or common stock previously owned by the optionee, or may be paid through a deferred payment arrangement, a broker assisted exercise, the net exercise of the option or other legal consideration or arrangements approved by our board of directors.

Generally, options granted under the 2004 plan may not be transferred other than by will or the laws of descent and distribution unless the optionee holds an NSO and the related option agreement provides otherwise. However, an optionee may designate a beneficiary who may exercise the options granted under the 2004 plan following the optionee's death.

Tax limitations on stock option grants. ISOs may be granted only to our employees. The aggregate fair market value, determined at the time of grant, of shares of our common stock subject to ISOs that are exercisable for the first time by an optionee during any calendar year under all of our stock plans may not exceed \$100,000. The options or portions of options that exceed this limit are treated as NSOs. No ISO may be granted to a 10% stockholder unless the following conditions are satisfied:

- the option exercise price is at least 110% of the fair market value of the stock subject to the option on the grant date; and
- the term of any ISO award must not exceed five years from the grant date.

Section 162(m). When we become subject to the requirements of Section 162(m) of the Code, which denies a deduction to publicly held corporations for certain compensation paid to specified employees in a taxable year to the extent that the compensation exceeds \$1,000,000, no person may be granted options under the 2004 plan covering more than 2,000,000 shares of our common stock in any calendar year.

Restricted stock awards. Restricted stock awards are purchased through a restricted stock award agreement. To the extent required by law, the purchase price for restricted stock awards must be at least the par value of the stock. The purchase price for a restricted stock award may be payable in cash or through a deferred payment or related arrangement, the recipient's past services performed for us, or any other form of legal consideration or arrangement acceptable to our board of directors. Rights to acquire shares under a restricted stock award may be transferred only as set forth in the restricted stock award agreement.

Stock appreciation rights. Stock appreciation rights are granted under the 2004 plan pursuant to stock appreciation rights agreements. The plan administrator determines the strike price for a stock appreciation right. Stock appreciation rights granted under the 2004 plan vest at the rate specified in the stock appreciation rights agreement.

The plan administrator determines the term of stock appreciation rights granted under the 2004 plan. Unless the terms of an awardee's stock appreciation rights agreement provides otherwise, if an awardee's service relationship with us, or any affiliate of ours, terminates for any reason, the awardee, or his or her beneficiary, may exercise any vested stock appreciation rights for up to three months

Management

after the date the service relationship ends unless the terms of the agreement provide for earlier or later termination.

Phantom stock. Phantom stock awards are granted under the 2004 plan pursuant to phantom stock award agreements. A phantom stock award may require the payment of at least the par value of the option subject to the award. Payment of any purchase price may be made in cash or common stock previously owned by the recipient or a combination of the two. Dividend equivalents may be credited in respect of shares covered by a phantom stock award, as determined by our board of directors. All phantom stock awards will be forfeited upon termination of the holder's service relationship with us, or any affiliate of ours, to the extent not vested on that date.

Other stock awards. The plan administrator may grant other awards based in whole or in part by reference to our common stock. The plan administrator will set the number of shares under the award, the purchase price, if any, the timing of exercise and vesting and any repurchase rights associated with these awards.

Corporate transactions and changes in control. In the event of certain corporate transactions, all outstanding stock awards granted under the 2004 plan following this offering either will be assumed, continued or substituted for by any surviving or acquiring entity. If the surviving or acquiring entity elects not to assume, continue or substitute for these awards, the vesting provisions of these awards will generally be accelerated and the awards will be terminated if not exercised prior to the effective date of the corporate transaction. We may assign any repurchase or reacquisition rights held by us with respect to outstanding stock awards to the surviving or acquiring entity. Following certain change in control transactions, the vesting and exercisability of certain stock awards granted under the 2004 plan following this offering generally will be accelerated only if and to the extent provided in the awardee's award agreement.

Our board of directors will make appropriate adjustments for a stock split, reverse stock split, stock dividend, combination or reclassification of the stock, or any other increase or decrease in the number of issued shares of common stock effected without receipt of consideration by the company.

Additional provisions. Our board of directors has the authority to amend outstanding awards granted under the 2004 plan, except that no amendment may adversely affect an award without the recipient's written consent. Our board of directors has the power to amend, suspend or terminate the 2004 plan. However, some amendments also require stockholder approval.

We are required to provide annual financial statements to individuals who participated in the 2004 plan prior to its amendment and restatement.

2004 Employee Stock Purchase Plan

We adopted, and our stockholders approved, our 2004 Employee Stock Purchase Plan, or the purchase plan, on March 23, 2004. The purchase plan will become effective upon the closing of this offering. The purchase plan is intended to qualify as an employee stock purchase plan within the meaning of Section 423 of the Code. Under the purchase plan, eligible employees will be able to purchase shares of our common stock at a discount price in periodic offerings.

Share reserve. An aggregate of 2,000,000 shares of our common stock are reserved for issuance pursuant to purchase rights granted to our employees or to employees of any of our affiliates under

Management

the purchase plan. On the first day of each calendar year, for a period of ten years beginning on January 1, 2005, the share reserve will automatically increase by the lesser of:

- 700,000 shares;
- 1% of the total number of shares of our common stock outstanding on that date; or
- an amount as may be determined by our board of directors.

However, under the terms of the purchase plan, in no event shall the annual increase cause the total number of shares reserved under the purchase plan to exceed 10% of the total number of shares of our capital stock outstanding on December 31 of the prior year. As of the date hereof, no shares of common stock have been purchased under the purchase plan.

Administration. Our board of directors will administer the purchase plan, but the board may delegate authority to administer the purchase plan to a committee of one or more members of the board. Subject to the terms of the purchase plan, the plan administrator will determine grant dates for purchase rights, interpret the purchase plan and purchase rights and establish rules for the administration of the purchase plan.

Eligibility. The purchase plan is implemented by offerings of rights to eligible employees. Our board of directors will establish the criteria for determining which employees are eligible to participate in an offering. Generally, all regular employees, including executive officers, who work more than twenty hours per week and are customarily employed by us or by any of our affiliates for more than five months per calendar year may participate in the purchase plan. Eligible employees may be granted rights only if the rights, together with any other rights granted under employee stock purchase plans, do not permit such employees' rights to purchase our stock to accrue at a rate which exceeds \$25,000 of the fair market value of such stock for each calendar year in which such rights are outstanding. In addition, no employee shall be eligible for the grant of any rights under the purchase plan if immediately after such rights are granted, the employee has voting power over 5% or more of our outstanding capital stock, measured by vote or value. For purposes of the purchase plan, stock which may be purchased under an outstanding purchase right is treated as owned by an employee. All outstanding purchase rights granted to an employee will terminate if the employee ceases to be employed by us or by any of our affiliates.

Offerings. Under the purchase plan, employees may purchase shares of our common stock during offerings through payroll deductions. Offerings may last up to 27 months. The first offering will begin on the effective date of this offering and last approximately six months, with one purchase occurring at the end of the six-month period. Eligible employees who participate in an offering may have up to 20% of their earnings for the period of that offering withheld for the purchase of common stock under the purchase plan. The price paid for common stock on the purchase dates will be determined by the plan administrator and will not be less than the lower of 85% of the fair market value of a share of our common stock on the first day of the offering period or 85% of the fair market value of a share of our common stock on the purchase date. Employees may end their participation in the offering at any time during the offering period, and participation ends automatically on termination of employment.

Transferability. Generally, a purchase right granted under the purchase plan may not be transferred other than by will or the laws of descent and distribution. However, an employee may designate a beneficiary who may exercise the purchase right following the optionee's death.

Corporate transactions. In the event of certain corporate transactions, any outstanding rights to purchase our stock under the purchase plan will be assumed, continued or substituted for by the surviving or acquiring entity. If the surviving or acquiring entity elects not to assume, continue or

Management

substitute for these rights, then the participants' accumulated contributions will be used to purchase shares of our common stock within ten days prior to the corporate transaction and the purchase rights will terminate immediately thereafter.

Our board of directors will make appropriate adjustments for a stock split, reverse stock split, stock dividend, combination or reclassification of the stock, or any other increase or decrease in the number of issued shares of common stock effected without receipt of consideration by the company.

Other provisions. Our board of directors has the authority to amend or terminate the purchase plan. However, no amendment or termination of the purchase plan or outstanding offering may adversely affect any outstanding rights to purchase shares of our common stock other than an amendment or termination as a result of an accounting treatment for the purchase plan that is detrimental to our best interests. Amendments generally will be submitted for stockholder approval only to the extent required by law or applicable exchange rules.

2004 Non-Employee Directors' Stock Option Plan

We adopted, and our stockholders approved, our 2004 Non-Employee Directors' Stock Option Plan, or the directors' plan, on March 23, 2004. The directors' plan will become effective upon the closing of this offering. The directors' plan provides for the automatic non-discretionary grant of NSOs to our non-employee directors.

Share reserve. An aggregate of 800,000 shares of our common stock are reserved for issuance under the directors' plan. Shares subject to options granted under the directors' plan that expire or otherwise terminate without being exercised will be returned to the director's plan and become available for issuance under the plan. Shares subject to options granted under the directors' plan that are withheld upon the exercise of an option or shares that are provided by a non-employee director to exercise an option, will remain available for issuance under the directors' plan. As of the date hereof, no shares of common stock have been issued under the directors' plan.

Administration. Our board of directors will administer the directors' plan, but the board may delegate authority to administer the directors' plan to a committee of one or more members of the board. Our board of directors has broad discretion to interpret and administer the directors' plan.

Automatic grants. Pursuant to the terms of the directors' plan, upon the completion of this offering, each of our non-employee directors will automatically receive an initial option grant to purchase 30,000 shares of our common stock. Each person who is not an employee of ours who is first elected or appointed to our board of directors after the closing of this offering will receive an initial option grant on the date of his or her election or appointment to purchase 30,000 shares of our common stock. Any person who is a non-employee director on the day of an annual meeting of our stockholders, beginning in 2005, will automatically be granted an option to purchase 10,000 shares of our common stock under the directors' plan on that date, the annual grant. However, in the event a non-employee director has not been a non-employee director since the date of the preceding annual meeting of our stockholders, that director will receive an annual grant that has been reduced *pro rata* for each full quarter prior to the date of grant during which such person did not serve as a non-employee director.

Terms. In general, the term of the stock options granted under the directors' plan may not exceed 10 years and the exercise price for the options cannot be less than 100% of the fair market value of the common stock on the date of grant. Acceptable consideration for the purchase of our common stock issued under the directors' plan will be determined by our board of directors and may include cash or common stock previously owned by the optionee or may be paid through a broker assisted exercise or net exercise feature. All initial option grants under the directors' plan vest in three equal annual installments and all annual option grants under the directors' plan vest in full on the grant

Management

date. An optionee whose service relationship with us or any of our affiliates, whether as a non-employee director or subsequently as an employee, director or consultant of either us or one of our affiliates, ceases for any reason may exercise options for the term provided in the option agreement to the extent the options were exercisable on the date of termination.

Transferability. Generally, an option granted under the directors' plan may not be transferred other than by will or by the laws of descent and distribution or pursuant to the terms of the option agreement. However, an optionee may designate a beneficiary who may exercise the option following the optionee's death.

Corporate transactions. In the event of certain corporate transactions, all outstanding options granted under the directors' plan will be assumed, continued or substituted for by any surviving entity. If the surviving or acquiring entity elects not to assume, continue or substitute for these options, the options will be terminated if not exercised prior to the effective date of the corporate transaction.

Our board of directors will make appropriate adjustments for a stock split, reverse stock split, stock dividend, combination or reclassification of the stock, or any other increase or decrease in the number of issued shares of common stock effected without receipt of consideration by the company.

Additional provisions. Our board of directors may amend or terminate the directors' plan at any time. However, some amendments will require stockholder approval and no amendment or termination may adversely affect a non-employee director's outstanding options without the non-employee director's written consent.

401(k) Plan

We sponsor a 401(k) plan that is a defined contribution plan. Employees who complete one month of service with us prior to an open enrollment date are eligible to participate in our 401(k) plan. Participants may make pre-tax contributions to the 401(k) plan each year of up to the statutorily prescribed annual limit, which is \$13,000 for 2004. Under the plan, each employee is fully vested in his or her deferred salary contributions after two years of service. Employee contributions are held in trust as required by law and invested by the plan's trustee according to the employee's instructions. Under our 401(k) plan, we may also make discretionary contributions and matching contributions, subject to established limits and a vesting schedule. During the year ended December 31, 2003, we contributed an aggregate of \$235,000 to our 401(k) plan. The 401(k) plan is intended to qualify under Section 401(a) of the Code so that contributions to the 401(k) plan, and income earned on these contributions, are not taxable to participants until withdrawn or distributed from the plan.

EXECUTIVE SEVERANCE AGREEMENTS

On August 1, 2003, we entered into executive severance agreements with Drs. Cheatham and Thomson and Messrs. Edstrom, Anderson and Burns. Each agreement is for a period of two years and will be automatically renewed for additional one-year periods unless either party gives notice to terminate the agreement at least 90 days prior to the end of its initial term or any subsequent term.

The agreements provide that each executive is an "at will" employee and that his employment with us may be terminated at any time by the employee or us. Under the agreements, in the event we terminate an executive's employment without cause (as defined below) or the employee terminates his employment with us for good reason (as defined below), the employee is generally entitled to receive the following:

- the portion of the employee's annual base salary earned through the termination date that was not paid prior to his termination, if any;

Management

- on the condition the employee executes a general release and settlement agreement, or Release, in favor of us, the employee's annual base salary on the date of termination for a period of 18 months following his termination, subject to certain limitations;
- on the condition the employee executes a Release, an amount equal to the average annual bonus received by the employee for the three years prior to his termination (or the prior period up to three years during which the employee was one of our executive officers and received a bonus);
- in the event the employee met the performance criteria for earning an annual bonus prior to his termination, a portion of the annual bonus earned for the year based on the number of days worked during the year;
- any compensation previously deferred by the employee and any accrued paid time-off that the employee is entitled to under our policy; and
- on the condition the employee executes a Release, health insurance and, under certain circumstances, life, disability and other insurance benefits for a period expiring on the earlier of 18 months following his termination or until he qualifies for related benefits from another employer.

In addition, the executive severance agreements provide that, on the condition the employee executes a Release, each vested stock option held by the employee on the date of termination will be exercisable for a period ending on the earlier of 18 months following that date or the end of the original term of the option.

Under the agreements, an employee may be terminated for cause if he, among other things:

- refuses to carry out or satisfactorily perform any of his lawful duties or any lawful instruction of our board of directors or senior management;
- violates any local, state or federal law involving the commission of a crime other than a minor traffic offense;
- is grossly negligent, engages in willful misconduct or breaches a fiduciary obligation to us;
- engages in any act that materially compromises his reputation or ability to represent us with investors, customers or the public; or
- reaches a mandatory retirement age established by us.

Under the agreements, good reason includes, among other things:

- a reduction of the executive's annual base salary to a level below his salary as of August 1, 2003;
- a material diminution in the executive's position, authority, duties or responsibilities with us, subject to certain limitations;
- an order by us to relocate the executive to an office located more than 50 miles from the executive's current residence and worksite;
- any non-renewal of the executive severance agreement by us, on the condition that the executive may terminate the agreement for good reason only during the 30-day period after he receives notice from us that we intend to terminate the agreement; and
- any material violation of the executive severance agreement by us.

Under the agreements, an employee must inform us if he intends to terminate his agreement for good reason. We have 30 days from the date we receive notice of the employee's intent to terminate the agreement for good reason to cure the default.

CHANGE OF CONTROL AGREEMENTS

On August 1, 2003, we entered into change of control agreements with Drs. Cheatham and Thomson and Messrs. Edstrom, Anderson and Burns. Each agreement is for a period of two years and will be automatically renewed for additional one-year periods unless either party gives notice to terminate the agreement at least 90 days prior to the end of its initial term or any subsequent term.

Under the agreements, a change of control will be deemed to occur upon:

- any transaction that results in a person or group acquiring beneficial ownership of 50% or more of our voting stock, other than us, one of our employee benefit plans, Mr. Mann or any other entity in which Mr. Mann holds a majority of the beneficial interests;
- any merger, consolidation or reorganization of us in which our stockholders immediately prior to the transaction hold less than 50% of the voting power of the surviving entity following the transaction, subject to certain limitations;
- any transaction in which we sell all or substantially all of our assets, subject to certain limitations;
- our liquidation; or
- any reorganization of our board of directors in which our incumbent directors (as defined in the agreements) cease for any reason to constitute a majority of the members of our board.

The agreements provide that in the event of a change of control, the employee is generally entitled to maintain the same position, authority and responsibilities held before the change of control, as well as the following compensation and benefits during the period ending on the earlier of 24 months following the change of control or the termination of his employment with us:

- his annual base salary in an amount equal or greater to his annual salary as of the date the change of control occurs;
- an annual bonus in an amount equal to the average annual bonus received by him for the three years prior to his termination (or the prior period up to three years during which he was one of our executive officers and received a bonus);
- medical, dental and other insurance, and any other benefits we may offer to our executives; and
- prompt reimbursement for all reasonable employment expenses incurred by him in accordance with our policies and procedures.

Under the change of control agreements, we may terminate an executive with or without cause (as defined below) and the executive may terminate his employment with us for good reason (as defined below) or any reason at any time during the 2-year period following a change of control. In the event we terminate an executive without cause or an executive terminates his employment with us for good reason, he is generally entitled to receive the following:

- the portion of his annual base salary earned through the termination date that was not paid prior to his termination, if any;
- on the condition the employee executes a Release in favor of us, the employee's annual base salary on the date of termination for a period of 18 months following his termination, subject to certain limitations;
- on the condition the employee executes a Release, an amount equal to 150% of his average annual bonus received by the employee for the three years prior to his termination (or the prior period up to three years during which the employee was one of our executive officers and received a bonus);

Management

- in the event the employee met the performance criteria for earning an annual bonus prior to his termination, a portion of the annual bonus earned for the year based on the number of days worked during the year;
- any compensation previously deferred by the employee and any accrued paid time-off that the employee is entitled to under our policy; and
- on the condition the employee executes a Release, health insurance and, under certain circumstances, life, disability and other insurance benefits for a period expiring on the earlier of 18 months following his termination or until he qualifies for related benefits from another employer.

In addition, the agreements provide that, on the condition the employee executes a Release, each option to purchase shares of our common stock held by him as of the termination date will become fully vested and exercisable at any point during the term of the option, subject to certain limitations.

Under the agreements, in the event we terminate an employee with cause or an employee terminates his employment with us without good reason, his agreement will terminate without any further obligation to either party.

The change of control agreements provide that an employee may be terminated for cause if he, among other things:

- refuses to carry out or satisfactorily perform any of his lawful duties or any lawful instruction of our board of directors or senior management;
- violates any local, state or federal law involving the commission of a crime other than a minor traffic offense;
- is grossly negligent, engages in willful misconduct or breaches a fiduciary obligation to us;
- engages in any act that materially compromises his reputation or ability to represent us with investors, customers or the public; or
- reaches a mandatory retirement age established by us before a change of control occurs.

Under the agreements, good reason includes, among other things:

- a failure by us to make all compensation payments and provide all insurance and related benefits to the employee required under the agreement during his employment following a change of control, subject to certain limitations;
- a material diminution in the employee's position, authority, duties or responsibilities with us;
- an order by us to relocate the employee to an office located more than 50 miles from the employee's current residence and worksite;
- any non-renewal of the change of control agreement by us, on the condition that the employee may terminate the agreement for good reason only during the 30-day period after he receives notice from us that we intend to terminate the agreement; and
- any material violation of the change of control agreement by us.

Under the change of control agreements, an employee must inform us if he intends to terminate his agreement for good reason. We have 30 days from the date we receive notice of the employee's intent to terminate the agreement for good reason to cure the default.

The executive and change of control agreements provide that in the event an executive becomes entitled to benefits under both agreements, compensation payments and other benefits will be coordinated to ensure the executive is entitled to receive the benefits described above without duplicating coverage.

LIMITATIONS OF LIABILITY AND INDEMNIFICATION OF OFFICERS AND DIRECTORS

We were incorporated under the laws of the State of Delaware. Section 145 of the Delaware General Corporation Law, or DGCL, generally provides that a Delaware corporation may indemnify any person who is, or is threatened to be made, a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation), by reason of the fact that the person is or was an officer, director, employee or agent of the corporation, or is or was serving at the request of the corporation as an officer, director, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding, provided that the person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation's best interests and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his or her conduct was illegal. A Delaware corporation may also indemnify any person who is, or is threatened to be made, a party to any threatened, pending or completed action or suit by or in the right of the corporation by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit, provided the person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation's best interests, except that no indemnification is permitted without judicial approval if the officer or director is adjudged to be liable to the corporation. Where an officer or director is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him or her against the expenses which the officer or director has actually and reasonably incurred.

Our amended and restated certificate of incorporation and amended and restated bylaws provide for the indemnification of our directors and executive officers to the fullest extent permitted under the DGCL and other applicable laws.

As permitted by Delaware law, we have entered into indemnity agreements with each of our directors and executive officers. These agreements generally require us to indemnify our directors and executive officers against any and all expenses (including attorneys' fees), witness fees, damages, judgments, fines, settlements and other amounts incurred (including expenses of a derivative action) in connection with any action, suit or proceeding, whether actual or threatened, to which any of these individuals may be made a party by reason of the fact that he or she is or was a director, officer or employee of ours or one of our affiliates, provided that he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to our best interests and, with respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful. Under the indemnification agreements, all expenses incurred by one of our directors or executive officers in defending any such action, suit or proceeding in advance of its final disposition shall be paid by us upon delivery to us of an undertaking, by or on behalf of the director or executive officer, to repay all advanced amounts if it is ultimately determined that the director or executive officer is not entitled to be indemnified by us under his or her indemnification agreement, our amended and restated bylaws or the DGCL. The indemnification agreements also set forth certain procedures that will apply in the event any of our directors or executive officers brings a claim for indemnification under his or her indemnification agreement.

Management

In addition, Section 102(b)(7) of the DGCL permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duties as a director, except for liability for:

- any transaction from which the director derives an improper personal benefit;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- improper payment of dividends or redemptions of shares; or
- any breach of a director's duty of loyalty to the corporation or its stockholders.

Our amended and restated certificate of incorporation includes such a provision.

There is currently no pending litigation or proceeding involving any of our directors or executive officers for which indemnification is being sought. We are not currently aware of any threatened litigation that may result in claims for indemnification against us by any of our directors or executive officers.

We have an insurance policy covering our officers and directors with respect to certain liabilities, including liabilities arising under the Securities Act of 1933, as amended, or Securities Act, or otherwise. The policy expires on March 14, 2005.

Certain relationships and related party transactions

The following is a description of transactions or series of transactions since January 1, 2000 to which we have been a party, in which the amount involved in the transaction or series of transactions exceeds \$60,000, and in which any of our directors, executive officers or persons who we know held more than five percent of any class of our capital stock, including their immediate family members, had or will have a direct or indirect material interest, other than compensation arrangements, which are described under "Management." Except as specifically described below regarding loans to former directors and former executive officers, we believe that the terms obtained or consideration that we paid or received, as applicable, in connection with the transactions described below were comparable to terms available or the amounts that would be paid or received, as applicable, in arm's-length transactions.

MERGER OF PDC, CTL AND ALLECURE

On December 12, 2001, we acquired AlleCure and CTL, and these entities became wholly-owned subsidiaries of ours. Pursuant to the terms of the acquisition, all outstanding shares of capital stock of CTL were exchanged for 2,504,928 shares of our common stock and 267,212 shares of our Series A preferred stock. In addition, all outstanding shares of capital stock of AlleCure were exchanged for 3,697,275 shares of our common stock and 192,618 shares of our Series B preferred stock. At the time of this transaction, we valued the stock issued to the former stockholders of CTL and AlleCure at approximately \$195,153,000. Following the acquisition, we changed our name from Pharmaceutical Discovery Corporation to MannKind Corporation. On December 31, 2002, we merged AlleCure and CTL with and into us and became one entity. Our shares of preferred stock issued to the former stockholders of AlleCure and CTL in connection with the merger on December 12, 2001, or the Merger, constitute 100% of the shares of Series A preferred stock and Series B preferred stock issued by us to date.

Prior to the Merger, Alfred E. Mann, our Chief Executive Officer and Chairman of the Board of Directors, held approximately 63.1% of the outstanding shares of common stock and 83.4% of the outstanding shares of preferred stock of CTL, approximately 51.7% of the outstanding shares of common stock and 100% of the outstanding shares of preferred stock of AlleCure and approximately 76% of the outstanding shares of common stock of PDC. In the Merger, in exchange for all of the outstanding shares of capital stock of AlleCure and CTL held by Mr. Mann, he received 222,864 shares of our Series A preferred stock and 192,618 shares of our Series B preferred stock, and 3,493,850 shares of common stock, which, when combined with his holdings of PDC common stock, totalled 8,107,029 shares of our common stock.

In connection with the Merger, we assumed the obligation under a warrant issued by CTL for the purchase of 118,424 shares of our common stock at an exercise price of \$21.12 per share initially issued to Mr. Mann by CTL on March 30, 2001. This warrant expired unexercised on March 31, 2003.

SEVERANCE AGREEMENTS

Dr. Solomon Steiner ceased to be an employee and a director of ours on February 6, 2003 pursuant to a settlement agreement with us. Under the settlement agreement, we became obligated to pay Dr. Steiner approximately \$1,049,288 over three years, comprised of approximately \$775,365 in deferred compensation from prior years and the remainder comprised of severance-related items. We have paid approximately \$451,110 of this amount. An additional \$271,378 is due in April 2004, \$42,500 is due in September 2004 and the remaining \$284,300 is due in April 2005. The settlement

Certain relationships and related party transactions

agreement further provides that the options held by Dr. Steiner to purchase up to 46,585 shares of our common stock remain fully exercisable through April 2007, and options to purchase up to 124,553 shares of our common stock remain fully exercisable until at least April 2006.

Dr. Stephen McCormack resigned as an employee and a director of ours in February 2003 pursuant to a settlement agreement with us dated March 28, 2003. Under the settlement agreement, we became obligated to pay Dr. McCormack his base salary at the rate of approximately \$22,468 per month through December 2003, and a lump sum payment of \$67,404 in February 2005.

Mr. John Simard resigned as an employee and a director of ours in September 2002 pursuant to a post-employment agreement with us. The post-employment agreement provides that options held by Mr. Simard to purchase up to 30,316 shares of our common stock remain fully exercisable until January 2, 2006.

Dr. Michael Page, our Chief Executive Officer from January 1, 2003, resigned as an employee and a director of ours effective October 7, 2003. Under the terms of a severance agreement, we are obligated to pay Dr. Page his base salary at the rate of approximately \$27,500 per month through April 2005 and a severance payment of \$165,000. The agreement also provides for accelerated vesting of an option held by Dr. Page permitting him to purchase up to 83,333 shares of our common stock until April 7, 2005.

LOANS TO FORMER DIRECTORS AND FORMER EXECUTIVE OFFICERS

On May 18, 2000, CTL sold and issued 1,965,000 shares of its common stock to Mr. Simard in exchange for a promissory note in the aggregate principal amount of \$1,179,000. The promissory note was due in May 2005, was full recourse as to both principal and interest, and was collateralized by the underlying shares of common stock issued in connection with the note. The note accrued interest at a fixed interest rate, which was less than the market interest rate available for a loan of similar size and terms from a third party. As a result, CTL recognized compensation expense of approximately \$121,000 in 2002, which was equal to the amount of the discount on the promissory note based on the difference between a market interest rate and the fixed interest rate and the term of the note. In connection with the Merger, Mr. Simard's shares of common stock of CTL were exchanged for 119,145 shares of our common stock and we were assigned the benefit of the promissory note. All outstanding principal and interest accrued under the note were repaid in full in March 2002.

On September 15, 2000, December 15, 2000 and April 2, 2001, AlleCure sold and issued an aggregate of 1,715,000 shares of its common stock to Dr. McCormack in exchange for three promissory notes in the aggregate principal amount of \$1,963,380. The promissory notes are due at various dates from 2005 to 2006, are full recourse as to both principal and interest and are collateralized by the underlying shares of common stock issued in connection with the notes. The notes are pre-payable by Dr. McCormack and he has no service obligation to us under the terms of the stock purchase. The note-for-stock transaction was accounted for as in-substance stock option grants to an employee. As a result, AlleCure recognized stock-based compensation expense of \$815,000 during 2001 in connection with these notes, which represented the intrinsic value of the in-substance stock options. This amount was reversed in 2002 because the in-substance options had no intrinsic value as of December 31, 2002. In connection with the Merger, Dr. McCormack's shares of common stock of AlleCure were exchanged for 110,113 shares of our common stock and we were assigned the benefit of the promissory notes. As of December 31, 2003, an aggregate of \$2,274,474 in principal and accrued interest was outstanding under the notes.

Certain relationships and related party transactions

COMMON STOCK FINANCINGS

From January 2001 through December 31, 2003, we sold shares of our common stock in private financings as follows:

- on June 30, 2001 and on August 31, 2001, we sold 159,048 and 1,192,861 shares of common stock, respectively, for a purchase price of \$25.14 per share;
- on May 2, 2002 we sold an aggregate of 233,849 shares of common stock for a purchase price of \$25.23 per share;
- during the period of June 2002 through December 2002 we sold 3,921,767 shares of common stock for a purchase price of \$15.00 per share;
- in January 2003, we entered into an agreement to sell an aggregate of 41,534 shares of common stock for a purchase price of \$15.00 per share, which we sold on December 22, 2003;
- during the period February 2003 through May 2003 we sold an aggregate of 2,838,315 shares of common stock for a purchase price of \$13.80-\$14.55 per share; and
- on August 9, 2003 we sold an aggregate of 654,879 shares of common stock for a purchase price of \$15.27 per share.

The investors in these financings included the following executive officers, directors, holders of more than five percent of our securities, and the immediate family members and affiliated entities of each:

Purchaser	Shares
Directors and executive officers	
Alfred E. Mann(1)	1,393,443
Kent Kresa(2)	20,000
David H. MacCallum	6,666
Immediate family members	
Claude Girault(3)	66,667
Howard Mann(4)	271,344
Richard Mann(5)	146,302
Carla Mann(6)	100,000
Kevin Mann(7)	26,667
Alfred Mann, Jr.(8)	40,000
Robert Mann(9)	19,818
Rosalind Koff(10)	25,667
5% or greater stockholders	
Biomed Partners, LLC(11)	2,420,498
Biomed Partners II, LLC(11)	2,406,029

(1) Alfred E. Mann holds the shares set forth opposite his name as trustee of the Alfred E. Mann Living Trust dated April 9, 1999.

(2) Kent Kresa holds the shares set forth opposite his name as trustee of the Kresa Family Trust.

(3) Claude Girault is the spouse of Alfred E. Mann.

(4) Howard Mann holds the shares set forth opposite his name as trustee of the Howard T. and Joni C. Mann Family Trust. Howard Mann is the son of Alfred E. Mann.

(5) Richard Mann holds the shares set forth opposite his name as trustee of the Richard Mann Family Trust #1, the Richard Mann Family Trust #2 and the Richard and Cheryl Mann Revocable Living Trust. Richard Mann is the son of Alfred E. Mann.

Certain relationships and related party transactions

- (6) *Carla Mann holds the shares set forth opposite her name as trustee of the Carla Mann Revocable Trust. Carla Mann is the daughter of Alfred E. Mann.*
- (7) *Kevin Mann is the son of Alfred E. Mann.*
- (8) *Alfred Mann, Jr. is the son of Alfred E. Mann.*
- (9) *Robert Mann is the brother of Alfred E. Mann.*
- (10) *Rosalind Koff is the sister of Alfred E. Mann.*
- (11) *The Alfred E. Mann Living Trust and Minimed Infusion, Inc. are each 0.1% managing members of each of Biomed Partners, LLC and Biomed Partners II, LLC. Alfred Mann has voting and dispositive power over the shares set forth opposite the names of each of these entities.*

SERIES C CONVERTIBLE PREFERRED STOCK FINANCING

On December 31, 2003 we sold 980,392 shares of our Series C convertible preferred stock in a private financing at a price of \$51.00 per share, including 364,589 shares to the Alfred E. Mann Living Trust.

We intend to effect a one-for-three reverse split of our common stock prior to the closing of this offering. Following the reverse split of our common stock, upon the closing of this offering, the outstanding shares of our Series A preferred stock, Series B preferred stock and Series C convertible preferred stock will automatically convert into an aggregate of 6,166,372 shares of our common stock.

INDEMNIFICATION AGREEMENTS WITH DIRECTORS AND EXECUTIVE OFFICERS

We have entered into indemnification agreements with each of our directors and executive officers, in addition to the indemnification provided for in our amended and restated certificate of incorporation and amended and restated bylaws. See “Management— Limitations of liability and indemnification of officers and directors.”

CONSULTING SERVICES

In 2002, while he was one of our directors, Dr. Page provided us with consulting services relating to our research and development programs. We paid Dr. Page approximately \$124,000 for his services. We did not enter into a written agreement with Dr. Page regarding his consulting services.

In 2004, we engaged one of our directors, Llew Keltner, to provide consulting services to our management in connection with our efforts to seek potential partners in the development and commercialization of our Technosphere Insulin System. As of March 31, 2004, we have paid Dr. Keltner approximately \$36,900 for consulting services rendered.

OTHER TRANSACTIONS

In connection with certain meetings of our board of directors and on other occasions when our business necessitated air travel for Mr. Mann and other MannKind employees, we utilized Mr. Mann’s private aircraft and we paid the charter company that manages the aircraft on behalf of Mr. Mann approximately \$441,000 in 2002 and approximately \$321,278 in 2003.

From January 2002 to October 2003, we leased property located in Sylmar, California from Sylmar Biomedical Park LLC, a company owned by Mr. Mann. Under the lease, we paid Sylmar Biomedical Park approximately \$39,081 and \$19,709 during the years ended December 31, 2002 and 2003, respectively.

On December 11, 2001, Mr. Mann entered into a put agreement with Mr. Simard whereby Mr. Simard had the right to require Mr. Mann to purchase 119,145 shares of our common stock held by Mr. Simard for a fixed price of approximately \$2,948,830, or \$24.75 per share. In February 2002 Mr. Simard exercised a portion of the put for approximately \$1,921,000, or 77,611 shares, which Mr. Mann paid to Mr. Simard in cash. Mr. Simard resigned in September 2002 and, pursuant to a post-employment agreement that was formalized and executed in January 2003, we assumed

Certain relationships and related party transactions

Mr. Mann's remaining obligation under the put agreement of approximately \$1,028,000. In January 2003, Mr. Simard exercised the remaining 41,534 shares covered by the put agreement and we paid Mr. Simard approximately \$1,028,000 in cash. In January 2003, in connection with our assumption of the remaining obligations under the put agreement, Mr. Mann agreed to purchase 41,534 shares of common stock for an aggregate price of approximately \$623,000. This price corresponded to the estimated fair value per share of our common stock at the time we entered into the agreement with Mr. Mann, which had declined below the exercise price of the put. We recorded approximately \$405,000 as a stock-based compensation expense representing the intrinsic value of the 41,534 shares of common stock subject to the put agreement at the time that we assumed the obligations thereunder.

Principal stockholders

The following table sets forth information regarding beneficial ownership of our capital stock as of May 31, 2004, as adjusted to reflect the sale of shares of our common stock in this offering, by the following:

- each person, or group of affiliated persons, known by us to be the beneficial owner of more than five percent of any class of our voting securities;
- each of our directors;
- each of the named executive officers; and
- all of our directors and executive officers as a group.

Beneficial ownership is determined in accordance with the rules of the SEC and is generally based on voting or investment power with respect to securities. Under SEC rules, in computing the number of shares beneficially owned and the percentage ownership, options and warrants to purchase shares of our capital stock that are exercisable within 60 days of May 31, 2004 are deemed to be beneficially owned by the persons holding these options or warrants for the purpose of determining beneficial ownership and computing percentage ownership of that person but are not treated as outstanding for the purpose of computing any other person's ownership percentage.

All information in this table relating to the number and percent of shares for the period before the offering is based on a total of 19,975,141 shares of common stock outstanding on May 31, 2004, 4,930,341 shares of our common stock issuable upon conversion of all outstanding shares of our preferred stock, at the conversion prices then in effect, and shares beneficially owned pursuant to options and warrants. All information in this table relating to the number and percent of shares for the period after the offering is based on a total of 19,975,141 shares of common stock outstanding on May 31, 2004, 5,500,000 shares of common stock offered hereby, 6,166,372 shares of common stock issuable upon conversion of all outstanding shares of preferred stock, at the conversion prices in effect on the date of the offering resulting from an assumed initial public offering price of \$14.00 per share, and shares beneficially owned pursuant to options and warrants. Except as indicated in the footnotes below, we believe, based on information furnished to us and subject to applicable community property laws, that the persons and entities named in the table below have sole voting and investment power with respect to all shares of common stock shown as beneficially owned

Principal stockholders

by them. Unless otherwise indicated, the address for each of the stockholders in the table below is MannKind Corporation, 28903 North Avenue Paine, Valencia, California 91355.

Beneficial owner	Number of shares beneficially owned		Percent of shares beneficially owned	
	Before offering	After offering	Before offering	After offering
Named executive officers and directors:				
Alfred E. Mann(1)	15,512,011(2)	15,996,616(3)	62.0%	50.4%
Hakan S. Edstrom	—	—	*	*
Richard L. Anderson	—	—	*	*
Dan R. Burns	—	—	*	*
David Thomson(4)	9,095	9,095	*	*
Kathleen Connell	—	—	*	*
Ronald Consiglio	—	—	*	*
Michael Friedman	—	—	*	*
Llew Keltner	—	—	*	*
Kent Kresa	20,000	20,000	*	*
David H. MacCallum	6,666	6,666	*	*
All directors and current executive officers as a group (10 persons)	15,547,772	16,032,377	62.1%	50.5%
Solomon S. Steiner(5)	583,573	583,573	2.3%	1.8%
Michael G. Page(6)	88,001	88,001	*	*
Five percent stockholders:				
Biomed Partners, LLC(7)	2,420,498	2,420,498	9.7%	7.6%
Biomed Partners II, LLC(7)	2,406,029	2,406,029	9.7%	7.6%

* Represents beneficial ownership of less than one percent.

- (1) *Includes 7,824,174 shares held by the Alfred E. Mann Living Trust, 10,968 shares held by Mannco LLC, 120,485 shares issuable to Alfred E. Mann upon the exercise of options vested as of 60 days following May 31, 2004, 2,420,498 shares held by Biomed Partners, LLC and 2,406,029 shares held by Biomed Partners II, LLC. The Alfred E. Mann Living Trust and Minimed Infusion, Inc. are each 0.1% managing members of each of Biomed Partners, LLC and Biomed Partners II, LLC. Alfred Mann has voting and dispositive power over the shares set forth opposite the names of each of these entities.*
- (2) *Includes 2,729,857 shares issuable upon conversion of preferred stock held by the Alfred E. Mann Living Trust.*
- (3) *Includes 3,214,462 shares issuable upon conversion of preferred stock held by the Alfred E. Mann Living Trust.*
- (4) *Includes 9,095 shares issuable to Dr. Thomson upon the exercise of options vested as of 60 days following May 31, 2004.*
- (5) *Includes 171,137 shares issuable to Dr. Steiner upon the exercise of options vested as of 60 days following May 31, 2004.*
- (6) *Includes 88,001 shares issuable to Dr. Page upon the exercise of options vested as of 60 days following May 31, 2004.*
- (7) *The Alfred E. Mann Living Trust and Minimed Infusion, Inc. are each 0.1% managing members of each of Biomed Partners, LLC and Biomed Partners II, LLC. Alfred Mann has voting and dispositive power over the shares set forth opposite the names of each of these entities.*

Description of capital stock

The following description of our capital stock gives effect to a one-for-three reverse stock split of our common stock that we expect to effect prior to the closing of this offering and to the amendment and restatement of our certificate of incorporation and bylaws which will occur effective upon the closing of this offering, and the conversion, upon the closing of this offering, of all then outstanding shares of our preferred stock, at an assumed initial public offering price of \$14.00 per share, into 6,166,372 shares of our common stock.

Upon completion of this offering, our authorized capital stock will consist of 100,000,000 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. The following description of our capital stock does not purport to be complete and is subject to, and qualified in its entirety by, the DGCL and our restated certificate of incorporation and bylaws, which are filed as exhibits to the registration statement of which this prospectus forms a part.

COMMON STOCK

Outstanding shares

As of May 31, 2004, 19,975,141 shares of our common stock were outstanding and held of record by 319 stockholders. In addition, as of May 31, 2004, 2,132,922 shares of our common stock were subject to outstanding options, 43,366 shares of our common stock were subject to outstanding warrants, and options to purchase 3,659,926 shares of our common stock were available for grant under our 2004 equity plan. Upon completion of this offering, there will be 31,641,513 shares of common stock outstanding, assuming no exercise of the underwriter's overallotment option, no exercise of outstanding options to purchase shares of our common stock and no exercise of warrants to purchase shares of common stock.

Voting rights

Each holder of our common stock is entitled to one vote for each share on all matters submitted to a vote of our stockholders, including the election of our directors. Under our amended and restated certificate of incorporation and bylaws, our stockholders will not have cumulative voting rights. Accordingly, the holders of a majority of our outstanding shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose. Any action by our common stockholders requires the majority vote of our outstanding shares of common stock.

Dividends

Subject to preferences that may be applicable to any outstanding shares of our preferred stock, holders of our common stock are entitled to receive ratably any dividends our board of directors declares out of funds legally available for that purpose. Dividends on our common stock will be non-cumulative.

Liquidation, dissolution or winding up

If we liquidate, dissolve or wind up, the holders of our common stock are entitled to share ratably in all assets legally available for distribution to our stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any outstanding shares of our preferred stock.

Description of capital stock

Rights and preferences

Our common stock has no preemptive, conversion or subscription rights. There are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of any outstanding shares of our preferred stock, which we may designate and issue in the future.

PREFERRED STOCK

Our current certificate of incorporation authorizes 5,000,000 shares of preferred stock, including:

- 267,213 shares designated Series A preferred stock;
- 192,618 shares designated Series B preferred stock; and
- 980,393 shares designated Series C preferred stock.

See Note 9 of the notes to our financial statements for a description of our currently outstanding preferred stock. Upon the closing of this offering, all outstanding shares of our Series A preferred stock, Series B preferred stock and Series C preferred stock will be converted into 6,166,372 shares of our common stock, at an assumed initial public offering price of \$14.00 per share. Following the conversion, our certificate of incorporation will be amended and restated to delete all references to these shares of preferred stock.

Under our amended and restated certificate of incorporation to be filed upon completion of this offering, our board of directors will have the authority, without further action by our stockholders, to issue up to 10,000,000 shares of our undesignated preferred stock in one or more series and to fix or alter the rights, preferences, privileges, qualifications and restrictions granted to or imposed upon any wholly unissued series of preferred stock, including dividend rights, conversion rights, voting rights, terms of redemption and any liquidation preferences, and to establish from time to time the number of shares constituting any such series. The issuance of preferred stock could result in one or more of the following:

- decreasing the market price of our common stock;
- restricting dividends on our common stock;
- diluting the voting power of our common stock;
- impairing the liquidation rights of our common stock; or
- delaying or preventing a change in control of us.

We currently have no plans to issue any shares of our undesignated preferred stock.

WARRANTS

As of May 31, 2004, warrants to purchase an aggregate of 43,366 shares of our common stock, with a weighted average exercise price of \$50.67 per share, were issued and outstanding. Each warrant contains provisions for the adjustment of the exercise price and the number of shares issuable upon the exercise of the warrant in the event we declare and issue any stock dividends or effect any stock split, reclassification or consolidation of our capital stock.

Description of capital stock

STOCK OPTIONS

As of May 31, 2004, options to purchase an aggregate of 2,132,922 shares of our common stock were outstanding under our equity incentive plans, comprised of:

- options to purchase 126,099 shares of our common stock granted under the 1991 plan, all of which were exercisable as of that date;
- options to purchase 305,430 shares of our common stock granted under the 1999 plan, 304,728 of which were exercisable as of that date;
- options to purchase 14,366 shares of our common stock granted under the AlleCure plan, 10,053 of which were exercisable as of that date;
- options to purchase 105,981 shares of our common stock granted under the CTL plan, 103,583 of which were exercisable as of that date;
- options to purchase 240,972 shares of our common stock granted outside our equity incentive plans, 120,486 of which were exercisable as of that date; and
- options to purchase 1,340,074 shares of our common stock granted under our 2004 equity plan, 125,301 of which were exercisable as of that date.

The options outstanding as of May 31, 2004 had a weighted average exercise price of \$10.18 per share of our common stock.

Based on options outstanding as of May 31, 2004, 3,659,926 shares of our common stock are reserved for future issuance under our 2004 Equity Incentive Plan effective as of the completion of this offering. In March 2004, our board of directors adopted, and our stockholders subsequently approved, effective upon completion of this offering, our director plan and purchase plan and an increase in the number of shares available for grant under our 2004 equity plan. See “Management — Employee benefit plans.”

REGISTRATION RIGHTS

Beginning 180 days after the completion of this offering, holders of an aggregate of 890,706 shares of our common stock or their transferees will be entitled to rights with respect to the registration of these shares under the Securities Act, subject to limitations and restrictions described below. In addition, the 1991 plan provides that we will use our best efforts to cause a registration statement with respect to the common stock issuable under the 1991 plan to be filed within 18 months after we become a publicly reporting company.

Demand registration rights

On October 15, 1998, in connection with a loan to CTL, CTL granted registration rights pursuant to a registration rights agreement, or Rights Agreement, to debtholders that subsequently converted their debt into preferred stock. The rights covered shares of common stock of CTL issued or issuable upon conversion of its preferred stock. In connection with the Merger, we issued 267,212 shares of our Series A preferred stock to former holders of CTL preferred stock and we assumed CTL’s registration obligations with respect to these shares under the Rights Agreement.

Under the Rights Agreement, at any time after 180 days following the completion of this offering, the holders of a majority of the shares of our common stock (on an as converted basis) subject to the Rights Agreement may require us, on not more than two occasions, to file a registration statement under the Securities Act covering these shares as long as the aggregate sale price of these shares to the public is at least \$5 million, subject to certain limitations. We will also be required to use our best

Description of capital stock

efforts to have the registration statement declared effective. However, if we believe in our reasonable judgment that proceeding with the registration would have a material and adverse impact on any financing, acquisition, reorganization or other material transaction involving us, we may delay filing the registration statement for a period not to exceed 60 days. Also, if the stockholders requesting registration request that the shares be offered for distribution through an underwriting, we may reduce the number of shares of our common stock requested to be registered upon the advice of our underwriters. If shares of our stock requested to be included in a registration must be excluded pursuant to the underwriters' advice, we will register a portion of the shares requested to be registered on a pro rata basis upon the holders of our stock requesting registration.

Piggyback registration rights

Subject to certain limitations, our stockholders who have registration rights under the Rights Agreement also have the right to request that their shares covered by the Rights Agreement be included in any registration of our common stock that is initiated either for our own account or for the account of our other securityholders. However, these stockholders have no registration rights with respect to registrations relating solely to our employee benefit plans or registrations on certain registration statement forms. In each case, we are required to give these holders notice of our intent to file a registration statement with the SEC at least 15 days prior to the filing date.

We have also granted registration rights to holders of outstanding warrants to purchase up to 43,366 shares of our common stock. Under the terms of the warrants, in the event we propose to register any shares of our common stock on a registration statement, these warrant holders have unlimited rights to request that their shares of common stock issued upon exercise of the warrants and any other shares of our common stock held by the warrant holders be included in the registration. However, if we are offering shares for distribution through an underwriting, we may reduce the number of shares of our common stock requested to be registered by the warrant holders upon the advice of our underwriters. If shares of our stock requested to be included in a registration must be excluded pursuant to the underwriters' advice, we will register a portion of the shares requested to be registered on a pro rata basis upon the holders of our stock requesting registration.

Transferability

The registration rights granted under the Rights Agreement are only transferable to a transferee or assignee who, after the transfer, holds at least 6,063 shares of our common stock (on an as converted basis) subject to the Rights Agreement. The registration rights granted under the warrants may be transferred to any transferee of shares of our common stock issued pursuant the warrants.

Expenses

Generally, we are required to bear all registration, selling and related expenses incurred in connection with the demand and piggyback registrations described above.

ANTI-TAKEOVER EFFECTS OF PROVISIONS OF DELAWARE LAW AND OUR CERTIFICATE OF INCORPORATION AND BYLAWS

We are subject to Section 203 of the DGCL, which regulates acquisitions of some Delaware corporations. In general, Section 203 prohibits, with some exceptions, a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period

Description of capital stock

of three years following the date of the transaction in which the person became an interested stockholder, unless:

- the board of directors of the corporation approved the business combination or the other transaction in which the person became an interested stockholder prior to the date of the business combination or other transaction;
- upon consummation of the transaction that resulted in the person becoming an interested stockholder, the person owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding shares owned by persons who are directors and also officers of the corporation and shares issued under employee stock plans under which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to the date the person became an interested stockholder, the board of directors of the corporation approved the business combination and the stockholders of the corporation authorized the business combination at an annual or special meeting of stockholders by the affirmative vote of at least 66 2/3% of the outstanding stock of the corporation not owned by the interested stockholder.

Section 203 of the DGCL generally defines a “business combination” to include any of the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the corporation’s assets or outstanding stock involving the interested stockholder;
- in general, any transaction that results in the issuance or transfer by the corporation of any of its stock to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of its stock owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an “interested stockholder” as any person who, together with the person’s affiliates and associates, owns, or within three years prior to the determination of interested stockholder status did own, 15% or more of a corporation’s voting stock.

Section 203 of the DGCL could depress our stock price and delay, discourage or prohibit transactions not approved in advance by our board of directors, such as takeover attempts that might otherwise involve the payment to our stockholders of a premium over the market price of our common stock.

Amended and restated certificate of incorporation and bylaw provisions

Our amended and restated certificate of incorporation and amended and restated bylaws include a number of provisions that may have the effect of deterring hostile takeovers or delaying or preventing changes in our control or our management, including, but not limited to the following:

- Our board of directors can issue up to 10,000,000 shares of preferred stock with any rights or preferences, including the right to approve or not approve an acquisition or other change in our control.
- Our restated certificate of incorporation provides that all stockholder actions upon completion of this offering must be effected at a duly called meeting of holders and not by written consent.

Description of capital stock

- Our amended and restated bylaws provide that special meetings of the stockholders may be called only by the Chairman of our board of directors, by our Chief Executive Officer, by our board of directors upon a resolution adopted by a majority of the total number of authorized directors or, under certain limited circumstances, by the holders of at least 5% of our outstanding voting stock.
- Our amended and restated bylaws provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide timely notice in writing and also specify requirements as to the form and content of a stockholder's notice. These provisions may delay or preclude stockholders from bringing matters before a meeting of our stockholders or from making nominations for directors at a meeting of stockholders, which could delay or deter takeover attempts or changes in our management.
- Our amended and restated certificate of incorporation provides that, subject to the rights of the holders of any outstanding series of preferred stock, all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum. In addition, our amended and restated certificate of incorporation provides that our board of directors may fix the number of directors by resolution.
- Our amended and restated bylaws provide that, following this offering, our directors may not be removed without cause.
- Our amended and restated certificate of incorporation does not provide for cumulative voting for directors. The absence of cumulative voting may make it more difficult for stockholders who own an aggregate of less than a majority of our voting stock to elect any directors to our board of directors.

These and other provisions contained in our amended and restated certificate of incorporation and amended and restated bylaws are expected to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors. However, these provisions could delay or discourage transactions involving an actual or potential change in control of us or our management, including transactions in which our stockholders might otherwise receive a premium for their shares over market price of our stock and may limit the ability of stockholders to remove our current management or approve transactions that our stockholders may deem to be in their best interests and, therefore, could adversely affect the price of our common stock.

LIMITATIONS OF LIABILITY AND INDEMNIFICATION MATTERS

We have adopted provisions in our amended and restated certificate of incorporation that limit the liability of our directors for monetary damages for breach of their fiduciary duties, except for liability that cannot be eliminated under the DGCL. Delaware law permits corporations to eliminate the personal liability of their directors for monetary damages for breach of their fiduciary duties as directors, except liability for any of the following:

- any breach of their duty of loyalty to the corporation or its stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the DGCL; or
- any transaction from which the director derived an improper personal benefit.

Description of capital stock

This limitation of liability does not apply to liabilities arising under the federal securities laws and does not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated certificate of incorporation and our amended and restated bylaws also provide that we must indemnify our directors and executive officers and may indemnify our other officers and employees and other agents to the fullest extent permitted by law. We believe that indemnification under our bylaws covers at least negligence on the part of indemnified parties. Our bylaws also permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in this capacity, regardless of whether our bylaws would permit indemnification.

We have also entered into separate indemnification agreements with our directors and executive officers. These agreements among other things, provide for indemnification of our directors and executive officers for expenses, judgments, fines and settlement amounts incurred by them in any action or proceeding arising out of their services as a director or executive officer or at our request. We believe that these provisions contained in our amended and restated certificate of incorporation and amended and restated bylaws and the indemnification agreements are necessary in order for us to attract and retain qualified persons as directors and executive officers.

TRANSFER AGENT AND REGISTRAR

The transfer agent and registrar for our common stock is expected to be Chase Mellon Investor Services. Chase Mellon Investor Services' address is 400 South Hope Street, Suite 400, Los Angeles, California 90071.

NASDAQ NATIONAL MARKET LISTING

There is currently no established public trading market for our common stock. We have applied to have our common stock quoted on The Nasdaq National Market under the trading symbol "MNKD."

Shares eligible for future sale

Prior to this offering, no public market existed for our common stock. Future sales of substantial amounts of common stock in the public market, or the perception that these sales could occur, could adversely affect prevailing market prices of our common stock.

Based on 19,975,141 shares of our common stock outstanding on May 31, 2004, upon completion of this offering, we will have 31,641,513 shares of common stock outstanding, assuming no exercise of currently outstanding options or warrants or the underwriters' over-allotment option and assuming the conversion, upon the closing of this offering, of all shares of preferred stock into common stock. All of the shares sold in this offering, plus any additional shares sold upon exercise of the underwriters' over-allotment option, will be freely transferable without restriction under the Securities Act unless they are held by our "affiliates," as that term is defined under the Securities Act and the rules and regulations promulgated thereunder. The remaining shares of our common stock held by existing stockholders are restricted securities. Restricted securities may be sold in the public market only if registered under the Securities Act or if they qualify for an exemption from registration under Rule 144 or Rule 701 promulgated under the Securities Act, which are summarized below, or another exemption.

LOCK-UP AGREEMENTS

We, our executive officers and directors and substantially all of our existing stockholders have entered into lock-up agreements with the underwriters. Under these agreements, subject to certain exceptions, we and each of these persons may not, without the prior written approval of UBS Securities LLC, offer, sell, contract to sell or otherwise dispose of, directly or indirectly, or hedge, our common stock or securities convertible into or exchangeable or exercisable for our common stock. These restrictions will be in effect for a period of 180 days after the date of this prospectus. The 180-day lock-up period may be extended for up to 37 additional days under certain circumstances where we announce or pre-announce earnings or material news or a material event within approximately 18 days prior to, or approximately 16 days after, the termination of the 180-day period. Even under those circumstances, however, the lock-up period will not extend if we are actively traded, meaning that we have a public float of at least \$150.0 million and average trading volume at least \$1.0 million per day. At any time and without public notice, UBS Securities LLC may, in its sole discretion, release all or some of the securities from these lock-up agreements. See "Underwriting."

RULE 144

In general, under Rule 144 of the Securities Act as currently in effect, beginning 90 days after the effective date of the registration statement of which this prospectus forms a part, a person who has beneficially owned shares of our common stock that are restricted securities for at least one year, including the holding period of any prior owner other than us or one of our affiliates, would be entitled to sell the number of restricted shares within any three-month period that does not exceed the greater of:

- one percent of the number of shares of our common stock then outstanding, which will equal approximately 316,415 shares immediately after the offering; or
- the average weekly reported trading volume of our common stock on The Nasdaq National Market during the four preceding calendar weeks.

Sales of restricted shares under Rule 144 are also subject to requirements regarding the manner of sale, notice and the availability of current public information about us.

Shares eligible for future sale

RULE 144(k)

Under Rule 144(k) of the Securities Act as currently in effect, a stockholder who is not one of our affiliates at any time during the 3 months preceding a sale and who has beneficially owned the restricted securities proposed to be sold for at least two years, including the holding period of any prior owner other than us or an affiliate of us, may sell those restricted securities without complying with the manner of sale, notice, public information or volume limitation provisions of Rule 144. However, these manner of sale, notice, public information and volume restrictions always apply to affiliates who sell shares in reliance on Rule 144.

RULE 701

Our directors, officers, other employees and consultants who acquired or will acquire shares of our common stock upon exercise of options granted under our equity incentive plans prior to this offering or who were granted options by AlleCure or CTL and assumed by us in connection with the Merger are entitled to rely on the resale provisions of Rule 701 under the Securities Act. Rule 701, as currently in effect, permits our affiliates and non-affiliates to sell their shares of our common stock issued pursuant to Rule 701 in reliance on Rule 144 beginning 90 days after the effective date of the registration statement of which this prospectus forms a part. Non-affiliates may sell Rule 701 shares without having to comply with the one-year holding period restrictions, subject only to the manner of sale provisions of Rule 144. Affiliates may also sell Rule 701 shares without having to comply with the one-year holding period restrictions, but they must meet the manner of sale, notice, public information and volume limitation provisions of Rule 144. However, substantially all Rule 701 shares of our common stock are subject to lock-up agreements described below and will only become eligible for sale at the expiration of the 180-day lock-up period.

SALE OF RESTRICTED SHARES

Based on the anticipated date of this offering, 26,141,513 shares of our common stock outstanding on a pro forma basis, assuming conversion of our preferred stock prior to consummation of this offering, will become eligible for sale under Rule 144 and Rule 701 without registration approximately as follows:

- approximately 15,903,458 shares of our common stock will be eligible for sale in the public market without restriction, approximately 10,003,587 of which are owned or controlled directly or indirectly by Mr. Mann and therefore are subject to the manner of sale, notice, public information and volume limitation provisions described above;
- approximately 5,119,021 shares of our common stock will be eligible for sale in the public market under Rule 144 or Rule 701, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, subject to the volume, manner of sale and other limitations under those rules; and
- the remaining approximately 5,119,034 shares of our common stock will become eligible for sale in the public market from time to time under Rule 144.

The discussion above does not take into consideration the effect of lock-up agreements as described above. Additionally, of the 2,132,922 shares issuable upon exercise of options to purchase our common stock outstanding as of May 31, 2004, approximately 1,387,750 shares will be vested and eligible for sale 180 days after the effective date of this offering under Rule 701.

Shares eligible for future sale

REGISTRATION RIGHTS

The holders of 934,072 shares of our common stock (after giving effect to the conversion of our Series A preferred stock and the exercise of our outstanding warrants), or their transferees, have the right in specified circumstances to require us to register their shares under the Securities Act for resale beginning 180 days from the effective date of this offering. If those holders, by exercising their demand registration rights, cause a large number of shares to be registered and sold in the public market, such sales could have an adverse effect on the market price for our common stock. In addition, if at any time we are required to include in a registration initiated either for our account or for the account of our other securityholders shares held by these holders upon the exercise of their piggyback registration rights, these sales may have an adverse effect on our ability to raise needed capital. See “Description of capital stock—Registration rights.”

STOCK OPTIONS AND FORM S-8 REGISTRATION STATEMENTS

As of May 31, 2004, options to purchase 126,099 shares of our common stock were outstanding under the 1991 plan, options to purchase 305,430 shares of our common stock were outstanding under the 1999 plan, options to purchase 14,366 shares of our common stock were outstanding under the AlleCure plan, options to purchase 105,981 shares of our common stock were outstanding under the CTL plan, options to purchase 1,340,074 shares of our common stock were outstanding under the 2004 equity plan and options to purchase 240,972 shares of our common stock were outstanding having been granted outside of our equity incentive plans. We have reserved for issuance, effective as of the closing of this offering, 3,659,926 shares of our common stock for issuance under our 2004 equity plan, and 2,800,000 shares of our common stock for issuance under our 2004 directors plan and purchase plan.

We intend to register the shares subject to these plans and the options on a registration statement on Form S-8 under the Securities Act following this offering. Subject to the lock-up agreements, the restrictions imposed under the 1991 plan, the 1999 plan, the AlleCure plan, the CTL plan, the 2004 equity plan and related option agreements, shares of common stock issued under these plans or agreements after the effective date of any registration statement on Form S-8 will be available for sale in the public market without restriction to the extent that they are held by persons who are not our affiliates.

Underwriting

We are offering the shares of our common stock described in this prospectus through the underwriters named below. UBS Securities LLC, Piper Jaffray & Co., Wachovia Capital Markets, LLC, Jefferies & Company, Inc. and Harris Nesbitt Corp. are the representatives of the underwriters. UBS Securities LLC is the sole book-running manager for this offering. We have entered into an agreement with the representatives. Subject to the terms and conditions of the underwriting agreement, each of the underwriters has severally agreed to purchase the number of shares of common stock listed next to its name in the following table:

Underwriters	Number of shares
UBS Securities LLC	
Piper Jaffray & Co.	
Wachovia Capital Markets, LLC	
Jefferies & Company, Inc.	
Harris Nesbitt Corp.	
Total	5,500,000

The underwriting agreement provides that the underwriters must buy all of the shares if they buy any of them. However, the underwriters are not required to take or pay for the shares covered by the underwriters' over-allotment option described below.

Our common stock is offered subject to a number of conditions, including:

- receipt and acceptance of our common stock by the underwriters; and
- the underwriters' right to reject orders in whole or in part.

We have been advised by the representatives that the underwriters intend to make a market in our common stock but that they are not obligated to do so and may discontinue making a market at any time without notice.

In connection with this offering certain of the underwriters or securities dealers may distribute prospectus electronically.

Sales of shares made outside the United States may be made by affiliates of the underwriters.

OVER-ALLOTMENT OPTION

We have granted the underwriters an option to buy 825,000 additional shares of our common stock. The underwriters may exercise this option solely for the purpose of covering over-allotments, if any, made in connection with this offering. The underwriters have 30 days from the date of this prospectus to exercise this option. If the underwriters exercise this option they will each purchase additional shares approximately in proportion to the amounts specified in the table above.

COMMISSIONS AND DISCOUNTS

Shares sold by the underwriters to the public will initially be offered at the initial public offering price set forth on the cover of this prospectus. Any shares sold by the underwriters to securities dealers may be sold at a discount of up to \$ _____ per share from the initial public offering price. Any of these securities dealers may resell any shares purchased from the underwriters to other brokers or dealers at a discount of up to \$ _____ per share from the initial public offering price. If all the shares are not sold

Underwriting

at the initial public offering price, the representatives may change the offering price and the other selling terms. Upon execution of the underwriting agreement, the underwriters will be obligated to purchase the shares at the prices and upon the terms stated therein and, as a result, will thereafter bear any risk associated with changing the offering price to the public or other selling terms. The underwriters have informed us that they do not expect discretionary sales to exceed 5% of the shares of common stock to be offered.

The following table shows the per share and total underwriting discounts and commissions we will pay to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase up to 825,000 additional shares.

	No exercise	Full exercise
Per share	\$	\$
Total	\$	\$

We estimate that the total expenses of the offering payable by us, excluding underwriting discounts and commissions, will be approximately \$1,600,000.

NO SALES OF SIMILAR SECURITIES

We, our executive officers and directors and substantially all of our existing stockholders have entered into lock-up agreements with the underwriters. Under these agreements, subject to certain exceptions, we and each of these persons may not, without the prior written approval of UBS Securities LLC, offer, sell, contract to sell or otherwise dispose of, directly or indirectly, or hedge, our common stock or securities convertible into or exchangeable or exercisable for our common stock. These restrictions will be in effect for a period of 180 days after the date of this prospectus. The 180-day lock-up period may be extended for up to 37 additional days under certain circumstances where we announce or pre-announce earnings or material news or a material event within approximately 18 days prior to, or approximately 16 days after, the termination of the 180-day period. Even under those circumstances, however, the lock-up period will not extend if we are actively traded, meaning that we have a public float of at least \$150.0 million and average trading volume at least \$1.0 million per day. At any time and without public notice, UBS Securities LLC may, in its sole discretion, release all or some of the securities from these lock-up agreements.

INDEMNIFICATION

We have agreed to indemnify the underwriters against certain liabilities, including certain liabilities under the Securities Act. If we are unable to provide this indemnification, we have agreed to contribute to payments the underwriters may be required to make in respect of those liabilities.

NASDAQ NATIONAL MARKET QUOTATION

We have applied to have our common stock approved for quotation on The Nasdaq National Market under the trading symbol "MNKD."

PRICE STABILIZATION, SHORT POSITIONS, PASSIVE MARKET MAKING

In connection with this offering, the underwriters may engage in activities that stabilize, maintain or otherwise affect the price of our common stock, including:

- stabilizing transactions;
- short sales;

Underwriting

- purchases to cover positions created by short sales;
- imposition of penalty bids;
- syndicate covering transactions; and
- passive market making.

Stabilizing transactions consist of bids or purchases made for the purpose of preventing or retarding a decline in the market price of the common stock while the offering is in progress. These transactions may also include short sales of our common stock, which involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering and purchasing shares of common stock in the open market to cover positions created by short sales. Short sales may be “covered short sales,” which are short positions in an amount not greater than the underwriters’ over-allotment option referred to above, or may be “naked short sales,” which are short positions in excess of that amount.

The underwriters may close out any covered short position by either exercising their over-allotment option, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the over-allotment option.

Naked short sales are sales in excess of the over-allotment option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchased in this offering.

The underwriters also may impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of that underwriter in stabilizing or short covering transactions.

As a result of these activities, the price of the common stock may be higher than the price that otherwise might exist in the open market. If these activities are commenced, they may be discontinued by the underwriters at any time. The underwriters may carry out these transactions on The Nasdaq National Market, in the over-the-counter market or otherwise.

DETERMINATION OF OFFERING PRICE

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be determined by negotiation by us and the representatives of the underwriters. The principal factors to be considered in determining the initial public offering price include:

- the information set forth in this prospectus and otherwise available to the representatives;
- the history of, and the prospects for, the industries in which we compete;
- our past and present financial performance and an assessment of our management;
- our prospects for future earnings and the present state of our development;
- the general condition of the securities markets at the time of this offering;
- the recent market prices of, and the demand for, publicly traded common stock of generally comparable companies; and
- other factors deemed relevant by the underwriters and us.

Underwriting

DIRECTED SHARE PROGRAM

At our request, certain of the underwriters have reserved up to 30% of the common stock being offered by this prospectus for sale at the initial public offering price to our directors, officers, employees and other individuals associated with us and members of their families. The sales will be made by UBS Financial Services Inc., a selected dealer affiliated with UBS Securities LLC, through a directed share program. We do not know if these persons will choose to purchase all or any portion of these reserved shares, but any purchases they do make will reduce the number of shares available to the general public. Certain employees and other persons purchasing these reserved shares will be prohibited from disposing of or hedging the shares for a period of at least 180 days after the date of this prospectus.

AFFILIATIONS

Certain of the underwriters and their affiliates have provided in the past and may provide from time to time certain commercial banking, financial advisory, investment banking and other services for us for which they will be entitled to receive separate fees. The underwriters may, from time to time, engage in transactions with us and perform services for us in the ordinary course of their business.

Legal matters

The validity of our shares of common stock being offered by this prospectus and certain other legal matters will be passed upon for us by Cooley Godward LLP, San Diego, California. Dewey Ballantine LLP, East Palo Alto, California, is counsel for the underwriters in connection with this offering.

Experts

The financial statements included in this prospectus, and the financial statements from which the Selected financial data included in this prospectus have been derived, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report appearing herein. Such financial statements and Selected financial data have been included herein in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

Where you can find additional information

We have filed with the SEC a registration statement on Form S-1 under the Securities Act that registers the shares of our common stock to be sold in this offering. This prospectus does not contain all of the information in the registration statement, including the exhibits and schedules filed with the registration statement. The rules and regulations of the SEC allow us to omit from this prospectus certain information included in the registration statement. For further information about us and our common stock, you should refer to the registration statement and the exhibits and schedules filed with the registration statement. With respect to the statements contained in this prospectus regarding the contents of any agreement or any other document, in each instance, the statement is qualified in all respects by the complete text of the agreement or document, a copy of which has been filed as an exhibit to the registration statement of which this prospectus forms a part. You may obtain copies of any materials we file with the SEC at the SEC's Public Reference Room at 450 Fifth Street, N.W., Washington, DC 20549, at prescribed rates. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet website that contains reports, proxy and information statements and other information about issuers that file electronically with the SEC. The address of that website is <http://www.sec.gov>.

Upon completion of this offering, we will become subject to the information and periodic reporting requirements of the Securities Exchange Act of 1934, as amended. Under the Exchange Act, we will file annual, quarterly and current reports, as well as proxy statements and other information with the SEC. These periodic reports, proxy statements and other information will be available for inspection and copying at the SEC's Public Reference Room and the website of the SEC referred to above.

[Table of Contents](#)

MannKind Corporation and Subsidiary (A Development Stage Company)

INDEX TO FINANCIAL STATEMENTS

	Page
Report of Independent Registered Public Accounting Firm	F-2
Consolidated Balance Sheets	F-3
Statements of Operations	F-4
Statements of Stockholders' Equity (Deficit)	F-5
Statements of Cash Flows	F-9
Notes to Financial Statements	F-11

MannKind Corporation and Subsidiary (A Development Stage Company)

Report of Independent Registered Public Accounting Firm

“Board of Directors

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, 2002 and 2003 and the related statements of operations, stockholders’ equity (deficit) and cash flows for each of the three years in the period ended December 31, 2003 and for the period from February 14, 1991 (date of inception) to December 31, 2003. These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with 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 financial statements present fairly, in all material respects, the financial position of MannKind Corporation and subsidiaries at December 31, 2002 and 2003 and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2003 and for the period from February 14, 1991 (date of inception) to December 31, 2003 in conformity with accounting principles generally accepted in the United States of America.

Los Angeles, California

April 29, 2004

(, 2004 as to the fifth paragraph of Note 1)”

DELOITTE & TOUCHE LLP

Los Angeles, California
July 2, 2004

The accompanying financial statements give effect to a one-for-three reverse split of the common stock of MannKind Corporation which will take place prior to the effective date of the registration statement of which this prospectus is a part. The preceding report is in the form which will be furnished by Deloitte & Touche LLP, an independent registered public accounting firm, upon completion of the one-for-three reverse split of the common stock of MannKind Corporation described in the fifth paragraph of Note 1 to the financial statements and assuming that from April 29, 2004 to the date of such completion no other material events have occurred that would affect the accompanying financial statements or disclosure therein.

[Table of Contents](#)
MannKind Corporation and Subsidiary (A Development Stage Company)
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share data)

	December 31,		March 31,	Pro forma Stockholders' Equity at March 31, 2004 (unaudited)
	2002	2003	2004 (unaudited)	
Assets				
Current assets:				
Cash and cash equivalents	\$ 19,917	\$ 54,120	\$ 56,111	
Marketable securities	11,135	1,825	3,194	
Prepaid expenses and other current assets	949	1,859	1,917	
Total current assets	32,001	57,804	61,222	
Property and equipment—net	72,675	67,323	66,881	
Restricted cash	—	559	559	
Other assets	97	190	104	
Total	\$ 104,773	\$ 125,876	\$ 128,766	
Liabilities and stockholders' equity				
Current liabilities:				
Accounts payable	\$ 4,209	\$ 1,926	\$ 2,329	
Accrued expenses and other current liabilities	1,757	4,015	4,947	
Payable to stockholder	—	1,406	—	
Deferred compensation—current	1,864	1,360	1,360	
Total current liabilities	7,830	8,707	8,636	
Deferred compensation	—	284	284	
Other liabilities	207	120	163	
Total liabilities	8,037	9,111	9,083	
Commitments and contingencies				
Series A redeemable convertible preferred stock, \$0.01 par value—267,213 shares authorized; 267,212, issued and outstanding at December 31, 2002 and 2003 and March 31, 2004 (unaudited), respectively; aggregate liquidation value, \$5,188 as of December 31, 2003 and \$5,252 as of March 31, 2004 (unaudited)	4,935	5,188	5,252	
Common stock subject to repurchase	1,028	—	—	
Stockholders' equity:				
Series B convertible preferred stock, \$0.01 par value—192,618 shares authorized, issued and outstanding at December 31, 2002 and 2003 and March 31, 2004 (unaudited), respectively; aggregate liquidation value, \$15,000 at December 31, 2003 and March 31, 2004 (unaudited)	15,000	15,000	15,000	—
Series C convertible preferred stock issuable	—	50,000	—	—
Series C convertible preferred stock subscriptions receivable	—	(18,153)	—	—
Series C convertible preferred stock, \$0.01 par value—980,393 shares authorized; 980,392 shares issued and outstanding at March 31, 2004 (unaudited), aggregate liquidation value of \$50,000 at March 31, 2004 (unaudited)	—	—	50,000	—
Common stock, \$0.01 par value—100,000,000 shares authorized; 16,463,904, 19,974,727, 19,975,141 and 26,141,513 shares issued and outstanding at December 31, 2002, 2003, March 31, 2004 (unaudited) and March 31, 2004 (pro forma unaudited), respectively	165	200	200	261
Additional paid-in capital	378,010	433,141	434,202	504,393
Notes receivable from stockholders	(1,310)	(1,412)	(1,438)	(1,438)
Notes receivable from officers	—	(228)	(153)	(153)
Deficit accumulated during the development stage	(301,092)	(366,971)	(383,380)	(383,380)
Total stockholders' equity	90,773	111,577	114,431	119,683

Total	\$ 104,773	\$ 125,876	\$ 128,766	\$ 128,766
-------	------------	------------	------------	------------

See notes to financial statements.

MannKind Corporation and Subsidiary (A Development Stage Company)

STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Year ended December 31,			Cumulative period from February 14, 1991 (date of inception) to December 31,	Three Months Ended March 31,		Cumulative period from February 14, 1991 (date of inception) to March 31,
	2001	2002	2003	2003	2003	2004	2004
Revenue	\$ 326	\$ —	\$ —	\$ 2,858	\$ —	\$ —	\$ 2,858
Operating expenses:							
Research and development	19,763	42,724	45,613	143,647	11,564	12,799	156,446
General and administrative	10,629	13,215	20,699	57,457	8,807	3,769	61,226
In-process research and development costs	19,726	—	—	19,726	—	—	19,726
Goodwill impairment	—	151,428	—	151,428	—	—	151,428
Total operating expenses	50,118	207,367	66,312	372,258	20,371	16,568	388,826
Loss from operations	(49,792)	(207,367)	(66,312)	(369,400)	(20,371)	(16,568)	(385,968)
Other income (expense)	288	487	(25)	(2,196)	(51)	54	(2,142)
Interest income	1,261	617	459	4,639	86	105	4,744
Loss before provision for income taxes	(48,243)	(206,263)	(65,878)	(366,957)	(20,336)	(16,409)	(383,366)
Income taxes	(2)	(2)	(1)	(14)	—	—	(14)
Net loss	(48,245)	(206,265)	(65,879)	(366,971)	(20,336)	(16,409)	(383,380)
Deemed dividend related to beneficial conversion feature of convertible preferred stock	—	(1,421)	(1,017)	(2,438)	—	(612)	(3,050)
Accretion on redeemable preferred stock	(239)	(251)	(253)	(892)	(60)	(64)	(956)
Net loss applicable to common stockholders	\$(48,484)	\$(207,937)	\$(67,149)	\$(370,301)	\$(20,396)	\$(17,085)	\$(387,386)
Basic and diluted net loss per share:							
Historical	\$ (4.60)	\$ (15.43)	\$ (3.63)		\$ (1.24)	\$ (0.86)	
Pro Forma (unaudited)			\$ (3.34)			\$ (0.71)	
Shares used to compute basic and diluted net loss per share:							
Historical	10,534	13,472	18,488		16,466	19,975	
Pro Forma (unaudited)			20,107			24,218	

See notes to financial statements.

[Table of Contents](#)

MannKind Corporation and Subsidiary (A Development Stage Company)

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
	Shares	Amount	Shares	Amount		
BALANCE, FEBRUARY 14, 1991						
Issuance of common stock for cash	—	\$ —	—	\$ —	\$ —	\$ —
Net loss	—	—	—	—	—	—
BALANCE, FEBRUARY 29, 1992	—	—	—	—	—	—
Issuance of common stock for cash and services	—	—	—	—	—	—
Capital contribution	—	—	—	—	—	—
Net loss	—	—	—	—	—	—
BALANCE, FEBRUARY 28, 1993	—	—	—	—	—	—
Issuance of common stock for cash	—	—	—	—	—	—
Issuance of stock for notes receivable	—	—	—	—	—	—
Net loss	—	—	—	—	—	—
BALANCE, FEBRUARY 28, 1994	—	—	—	—	—	—
Issuance of common stock for cash and services	—	—	—	—	—	—
Collection of stock subscription	—	—	—	—	—	—
Net loss	—	—	—	—	—	—
BALANCE, DECEMBER 31, 1994	—	—	—	—	—	—
Issuance of common stock for services	—	—	—	—	—	—
Exercise of stock options	—	—	—	—	—	—
Stock compensation	—	—	—	—	—	—
Net loss	—	—	—	—	—	—
BALANCE, DECEMBER 31, 1995	—	—	—	—	—	—
Issuance of common stock for cash and services	—	—	—	—	—	—
Exercise of stock options	—	—	—	—	—	—
Stock compensation	—	—	—	—	—	—
Net loss	—	—	—	—	—	—
BALANCE, DECEMBER 31, 1996	—	—	—	—	—	—
Issuance of common stock for cash and services	—	—	—	—	—	—
Stock compensation	—	—	—	—	—	—
Exercise of stock options	—	—	—	—	—	—
Conversion of notes payable	—	—	—	—	—	—
Net loss	—	—	—	—	—	—
BALANCE, DECEMBER 31, 1997	—	—	—	—	—	—
Issuance of common stock for cash and services	—	—	—	—	—	—
Stock compensation	—	—	—	—	—	—
Exercise of stock options	—	—	—	—	—	—
Conversion of notes payable	—	—	—	—	—	—
Net loss	—	—	—	—	—	—

[Additional columns below]

[Continued from above table, first column(s) repeated]

	Common stock		Additional paid-in capital	Notes receivable from stockholders	Notes receivable from officers	Deficit accumulated during the development stage	Total
	Shares	Amount					
BALANCE, FEBRUARY 14, 1991							
Issuance of common stock for cash	998	\$ 10	\$ 890	\$ —	\$ —	\$ —	\$ 900
Net loss	—	—	—	—	—	(911)	(911)
BALANCE, FEBRUARY 29, 1992							
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							
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							
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							
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							
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							
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							
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	215	2	1,200	—	—	—	1,202

payable

Net loss	—	—	—	—	—	(3,331)	(3,331)
----------	---	---	---	---	---	---------	---------

[Table of Contents](#)
MannKind Corporation and Subsidiary (A Development Stage Company)
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
	Shares	Amount	Shares	Amount		
BALANCE, DECEMBER 31, 1998	—	\$ —	—	\$ —	\$ —	\$ —
Issuance of common stock						
Conversion of notes payable						
Net loss	—	—	—	—	—	—
BALANCE, DECEMBER 31, 1999	—	—	—	—	—	—
Conversion of notes payable	—	—	—	—	—	—
Issuance of Series B preferred stock for cash	193	15,000	—	—	—	—
Issuance of common stock for cash, services and notes	—	—	—	—	—	—
Discount on notes below market rate	—	—	—	—	—	—
Accrued interest on notes	—	—	—	—	—	—
Purchase of Series A redeemable convertible preferred stock	—	—	—	—	—	—
Amount in excess of redemption obligation	—	—	—	—	—	—
Accretion to redemption value on Series A redeemable convertible preferred stock	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	—
Net loss	—	—	—	—	—	—
BALANCE, DECEMBER 31, 2000	193	15,000	—	—	—	—
Issuance of common stock for cash	—	—	—	—	—	—
Cash received for common stock to be issued	—	—	—	—	—	—
Issuance of common stock for services	—	—	—	—	—	—
Exercise of stock options	—	—	—	—	—	—
Accrued interest on notes	—	—	—	—	—	—
Payments on notes receivable	—	—	—	—	—	—
Accretion to redemption value on Series A redeemable convertible preferred stock	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	—
Issuance of put option by stockholder	—	—	—	—	—	—
Record merger of entities	—	—	—	—	—	—
Net loss	—	—	—	—	—	—
BALANCE, DECEMBER 31, 2001	193	15,000	—	—	—	—
Issuance of common stock for cash	—	—	—	—	—	—
Issuance of common stock for cash already received	—	—	—	—	—	—
Issuance of stock award to employee	—	—	—	—	—	—
Cash received for common stock issuable	—	—	—	—	—	—
Accrued interest on notes	—	—	—	—	—	—

[Additional columns below]

[Continued from above table, first column(s) repeated]

	Common stock		Additional paid-in capital	Notes receivable from stockholders	Notes receivable from officers	Deficit accumulated during the development stage	Total
	Shares	Amount					
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)
Conversion of notes payable	63	1	1,073	—	—	—	1,074
Issuance of Series B preferred stock for cash	—	—	—	—	—	—	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	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	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)

[Table of Contents](#)
MannKind Corporation and Subsidiary (A Development Stage Company)
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
	Shares	Amount	Shares	Amount		
Payments on notes receivable	—	\$ —	—	\$ —	\$ —	\$ —
Beneficial conversion feature of Series B convertible preferred stock	—	—	—	—	—	—
Deemed dividend related to beneficial conversion feature of Series B convertible preferred stock	—	—	—	—	—	—
Accretion to redemption value on Series A redeemable convertible preferred stock	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	—
Put option redemption by stockholder	—	—	—	—	—	—
Net loss	—	—	—	—	—	—
BALANCE, DECEMBER 31, 2002	193	15,000	—	—	—	—
Issuance of Series C convertible preferred stock subscriptions	—	—	—	—	50,000	(50,000)
Cash collected on Series C convertible preferred stock subscriptions	—	—	—	—	—	31,847
Issuance of common stock for cash	—	—	—	—	—	—
Non-cash compensation expense of officer resulting from stockholder contribution	—	—	—	—	—	—
Issuance of common stock for cash already received	—	—	—	—	—	—
Notes receivable by stockholder issued to officers	—	—	—	—	—	—
Accrued interest on notes	—	—	—	—	—	—
Beneficial conversion feature of Series B convertible preferred stock	—	—	—	—	—	—
Deemed dividend related to beneficial conversion feature of Series B convertible preferred stock	—	—	—	—	—	—
Accretion to redemption value on Series A redeemable convertible preferred stock	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	—
Put shares sold to majority stockholder	—	—	—	—	—	—
Net loss	—	—	—	—	—	—
BALANCE, DECEMBER 31, 2003	193	\$15,000	—	\$ —	\$50,000	\$(18,153)

[Additional columns below]

[Continued from above table, first column(s) repeated]

	Common stock		Additional paid-in capital	Notes receivable from stockholders	Notes receivable from officers	Deficit accumulated during the development stage	Total
	Shares	Amount					
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	16,464	165	378,010	(1,310)	—	(301,092)	90,773
Issuance of Series C convertible preferred stock subscriptions	—	—	—	—	—	—	—
Cash collected on Series C convertible preferred stock subscriptions	—	—	—	—	—	—	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	19,975	\$200	\$433,141	\$(1,412)	\$(228)	\$(366,971)	\$ 111,577

[Table of Contents](#)
MannKind Corporation and Subsidiary (A Development Stage Company)
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
	Shares	Amount	Shares	Amount		
Issuance of Series C convertible preferred stock for cash	—	\$ —	356	\$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	—	—	—	—	—	—
Accrued interest on notes	—	—	—	—	—	—
Repayment of notes receivable by stockholder issued to officers	—	—	—	—	—	—
Beneficial conversion feature of Series B convertible preferred stock	—	—	—	—	—	—
Deemed dividend related to beneficial conversion feature of Series B convertible preferred stock	—	—	—	—	—	—
Accretion to redemption value on Series A redeemable convertible preferred stock	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	—
Net loss	—	—	—	—	—	—
BALANCE, MARCH 31, 2004 (UNAUDITED)	193	\$15,000	980	\$50,000	\$ —	\$ —

[Additional columns below]

[Continued from above table, first column(s) repeated]

	Common stock		Additional paid-in capital	Notes receivable from stockholders	Notes receivable from officers	Deficit accumulated during the development stage	Total
	Shares	Amount					
Issuance of Series C convertible preferred stock for cash	—	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 18,153
Issuance of Series C convertible preferred stock for cash already received	—	—	—	—	—	—	—
Exercise of stock options	—	—	5	—	—	—	5
Accrued interest on notes	—	—	—	(26)	—	—	(26)
Repayment of notes receivable by stockholder issued to officers	—	—	(75)	—	75	—	—
Beneficial conversion feature of Series B convertible preferred stock	—	—	612	—	—	—	612
Deemed dividend related to beneficial conversion feature of Series B convertible preferred stock	—	—	(612)	—	—	—	(612)
Accretion to redemption	—	—	(64)	—	—	—	(64)

value on Series A redeemable convertible preferred stock							
Stock-based compensation	—	—	1,195	—	—	—	1,195
Net loss	—	—	—	—	—	(16,409)	(16,409)
	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>(16,409)</u>	<u>(16,409)</u>
BALANCE, MARCH 31, 2004 (UNAUDITED)	19,975	\$200	\$434,202	\$(1,438)	\$(153)	\$(383,380)	\$114,431
	<u>19,975</u>	<u>\$200</u>	<u>\$434,202</u>	<u>\$(1,438)</u>	<u>\$(153)</u>	<u>\$(383,380)</u>	<u>\$114,431</u>

Proceeds from notes receivables	28	1,314	—	1,742	—	—	1,742
Principal payments on notes payable	(2,558)	(24)	—	(1,667)	—	—	(1,667)
Payable to stockholder			1,406	1,406	—	(1,406)	—
Issuance of Series B convertible preferred stock for cash	—	—	—	15,000	—	—	15,000
Collection of Series C convertible preferred stock subscriptions receivable	—	—	31,847	31,847	—	18,153	50,000
Borrowings on notes payable	—	—	—	3,460	—	—	3,460
	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Net cash provided by financing activities	79,497	60,203	82,848	295,343	18,972	16,752	312,095
	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

MannKind Corporation and Subsidiary (A Development Stage Company)

NOTES TO FINANCIAL STATEMENTS

1. Description of business and basis of presentation

Business—MannKind Corporation (the “Company”) is a biopharmaceutical company focused on the development and commercialization of therapeutic products for diseases such as diabetes, cancer, inflammatory and autoimmune diseases. The Company’s lead product, the Technosphere Insulin System, which is currently in late Phase II clinical trials for the treatment of diabetes, consists of our dry-powder Technosphere formulation of insulin and our MedTone inhaler through which the powder is inhaled into the deep lung.

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. Since its inception through March 31, 2004 the Company has reported accumulated net losses of \$383,380,000 which include a goodwill impairment charge of \$151,428,000 (see Note 2), and negative cash flow from operations of \$165,040,000. It is costly to develop therapeutic products and conduct clinical trials for these products. Based upon the Company’s current expectations, management believes the Company’s existing capital resources will enable it to continue planned operations through the third quarter of 2004. Management plans to raise additional funds through the issuance of equity securities in an initial public offering of its common stock. Management believes the Company’s existing capital resources together with proceeds anticipated from the initial public offering will enable it to continue planned operations into the second quarter of 2005. 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. If planned operating results are not achieved or the Company is not successful in raising additional equity financing, management believes that planned expenditures could be reduced substantially; extending the time period over which the Company’s currently available capital resources will be adequate to fund the Company’s operations.

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 \$19,726,000 and goodwill of \$151,428,000 were recorded at the entity level. The historical basis of PDC and the historical basis relating to the ownership interests of Alfred 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 MannKind and ceased to be separate entities.

Reverse Stock Split — On May 27, 2004, the Company’s board of directors approved a one-for-three reverse stock split to be effected prior to an initial public offering of the Company’s common stock.

MannKind Corporation and Subsidiary (A Development Stage Company)

NOTES TO FINANCIAL STATEMENTS — (continued)

All common share and per common share amounts in the consolidated financial statements have been retroactively adjusted for all periods presented to give effect to the reverse stock split, including reclassifying an amount equal to the reduction in par value to additional paid-in capital.

2. Summary of significant accounting policies

Unaudited Interim Financial Statements—The consolidated financial statements as of March 31, 2004 and for the three months ended March 31, 2003 and 2004, and the cumulative period from February 14, 1991 (date of inception) to March 31, 2004, are unaudited. In the opinion of management, the unaudited financial statements have been prepared on the same basis as the annual financial statements and include all adjustments necessary for a fair presentation of the financial statements. Results of interim periods are not necessarily indicative of the results to be expected for the entire fiscal year.

Reclassifications—Certain reclassifications have been made to the prior years financial statements to conform to the 2003 presentation.

Unaudited Pro Forma Stockholders' Equity and Net Loss Per Share—The unaudited pro forma stockholders' equity at March 31, 2004 reflects the conversion, upon closing of an initial offering of the Company's common stock, all 267,212 shares of the Company's Series A redeemable convertible preferred stock, all 192,618 shares of the Company's Series B convertible preferred stock and all 980,392 shares of the Company's Series C convertible preferred stock, each outstanding as of March 31, 2004, at an assumed initial public offering price of \$14.00 per shares, into 6,166,372 shares of common stock.

The Company's Series A, B and C preferred stock automatically convert, based on the criteria described in Note 9, into common stock upon the closing of an initial public offering of the Company's common stock. The unaudited pro forma net loss per share for the year ended December 31, 2003 and the three months ended March 31, 2004 is computed using the weighted average number of common shares outstanding during the respective periods, including the pro forma effects of the assumed conversion of the Company's Series A, B and C convertible preferred stock into shares of the Company's common stock upon the closing of the Company's proposed initial public offering. Conversion of the Series A, B and C convertible preferred stock reflects the weighted average effective conversion prices of the securities during the periods presented. Conversion of the Series A and B preferred stock is assumed to have occurred as of January 1, 2003. Conversion of the Series C preferred stock is assumed to have occurred as of January 19, 2004, the effective issuance date of the

MannKind Corporation and Subsidiary (A Development Stage Company)**NOTES TO FINANCIAL STATEMENTS — (continued)**

Series C preferred stock. The following table summarizes the components of the unaudited pro forma net loss per share:

	Year ended December 31, 2003	Three months ended March 31, 2004
		(unaudited)
Net loss	\$(65,879,000)	\$(16,409,000)
Deemed dividend related to beneficial conversion features of convertible preferred stock	(1,017,000)	(612,000)
Accretion to preferred stockholders	(253,000)	(64,000)
	<u>\$(67,149,000)</u>	<u>\$(17,085,000)</u>
Weighted average shares used in computing basic and diluted net loss per share	18,487,521	19,974,812
Adjusted to reflect the effect of the assumed conversion of convertible preferred stock	1,619,076	4,243,506
	<u>20,106,597</u>	<u>24,218,318</u>
Pro forma basic and diluted net loss per share attributable to common stockholders	<u>\$ (3.34)</u>	<u>\$ (0.71)</u>

Financial Statement Estimates—The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America 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.

Cash and Cash Equivalents—The Company considers all highly liquid investments with a purchased maturity date of 90 days or less to be cash equivalents.

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

Marketable Securities—The Company accounts for marketable securities as available for sale, in accordance with Statement of Financial Accounting Standards (“SFAS”) No. 115, *Accounting for Certain Debt and Equity Securities*. Unrealized holding gains and losses for available-for-sale securities are reported as a separate component of stockholders’ equity until realized.

Deferred Offering Costs—In connection with its proposed initial public offering, the Company has \$464,216 and \$645,794 of deferred offering costs included in prepaid expenses and other current assets in the accompanying balance sheet at December 31, 2003 and March 31, 2004.

Fair Value of Financial Instruments—The carrying amounts of financial instruments, which include cash equivalents, marketable securities, accounts payable, accrued expenses and other current liabilities and payable to stockholder, approximate their fair values due to their relatively short maturities. The carrying amounts of the notes receivable from stockholders and officers reflect market rates of interest for similar loans of similar amounts and terms available from a third party (see Notes 6 and 7).

NOTES TO FINANCIAL STATEMENTS — (continued)

Goodwill and Identifiable Intangibles—As of December 31, 2001, the Company's balance sheet included goodwill of \$151,428,000, which resulted from the merger with AlleCure and CTL on December 12, 2001, as described in Note 1. Upon adoption of SFAS No. 142, *Goodwill and Other Intangible Assets*, on January 1, 2002, the Company, under the initial transitional test, determined there was no impairment of goodwill, principally because as of the date of the transitional impairment test management believed the independent valuation used as a basis to initially record the goodwill remained appropriate and did not indicate the goodwill was impaired. In connection with the implementation of SFAS No. 142, 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. Toward the end of the third quarter of 2002, the Company initiated an internal study to assess whether the product development programs acquired in the merger with AlleCure and CTL were meeting their objectives. As a result of the internal study, the Company's management concluded in December 2002 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, during the first quarter of 2003, 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 balance of \$151,428,000 was determined to be fully impaired and an impairment loss was recorded in the fourth quarter of 2002.

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. 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. If the estimated future cash flows from the use of an asset are less than the carrying value, a write-down would be recorded to reduce the related asset to its estimated fair value. For the year ended December 31, 2003, the Company recorded a write-down of long-lived assets of approximately \$2,154,000.

Income Taxes—Deferred income tax assets and liabilities are recorded for the expected future tax consequences of temporary differences between the financial statement carrying amounts and the income tax basis of assets and liabilities. A valuation allowance is recorded to reduce net deferred income tax assets to amounts that are more likely than not to be realized.

Stock-Based Compensation—At December 31, 2003 and March 31, 2004 the Company has three stock-based compensation plans, which are described more fully in Note 10. The Company accounts for employee stock options using the intrinsic value method in accordance with Accounting Principles Board ("APB") Opinion No. 25, *Accounting for Stock Issued to Employees*, and its interpretations, and has adopted the disclosure-only alternative of SFAS No. 123, *Accounting for Stock-Based Compensation*. Stock options issued to consultants are accounted for in accordance with the provisions of Emerging Issues Task Force Issue ("EITF") No. 96-18, *Accounting for Equity*

MannKind Corporation and Subsidiary (A Development Stage Company)

NOTES TO FINANCIAL STATEMENTS — (continued)

Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services, and FASB Interpretation No. 28 (“FIN 28”), Accounting for Stock Appreciation Rights and Other Variable Stock Option or Award Plans.

Under SFAS No. 123 the Company estimates the fair value of each stock option at the grant date or modification date, if any, by using the Black-Scholes option-pricing model with the following weighted-average assumptions:

	Year ended December 31,			Three months ended March 31,	
	2001	2002	2003	2003	2004
				(unaudited)	
Risk-free interest rate	4.94%	3.53%	2.90%	2.71%	2.28%
Expected lives	8 years	8 years	4 years	8 years	4 years
Volatility	100%	100%	100%	100%	100%

The weighted-average expected lives for the year ended December 31, 2003 decreased to approximately 4 years from 8 years for each of the years ended December 31, 2001 and 2002 primarily because options granted during 2003 under the re-pricing program described in Note 10 have a 4-year term.

Had compensation cost been determined under the accounting provisions of SFAS No. 123, the Company’s net loss would have been adjusted to the pro forma amounts indicated below (in thousands):

	Year ended December 31,			Three months ended March 31,	
	2001	2002	2003	2003	2004
				(unaudited)	
Net loss—as reported	\$(48,245)	\$(206,265)	\$(65,879)	\$(20,336)	\$(16,409)
Add: Stock-based employee compensation expense included in reported net loss	1,565	352	4,501	2,984	1,195
Deduct: Total stock-based employee compensation expense determined under the fair value based method for all awards	(3,943)	(5,724)	(6,863)	(7,685)	(2,150)
Net loss—pro forma	(50,623)	(211,637)	(68,241)	(25,037)	(17,364)
Deemed dividend related to beneficial conversion features of convertible preferred stock	—	(1,421)	(1,017)	—	(612)
Accretion on redeemable preferred stock	(239)	(251)	(253)	(60)	(64)
Net loss applicable to common stockholders—pro forma	\$(50,862)	\$(213,309)	\$(69,511)	\$(25,097)	\$(18,040)
Basic and diluted loss attributable to common stockholders per share, as reported	\$ (4.60)	\$ (15.43)	\$ (3.63)	\$ (1.24)	\$ (0.86)
Basic and diluted loss attributable to common stockholders per share, pro forma	\$ (4.83)	\$ (15.83)	\$ (3.76)	\$ (1.52)	\$ (0.90)

MannKind Corporation and Subsidiary (A Development Stage Company)**NOTES TO FINANCIAL STATEMENTS — (continued)**

Research and Development—Research and development expenses consist primarily of costs associated with the clinical trials of the Company’s product candidates, manufacturing supplies and other development materials, compensation and other expenses for research and development personnel, costs for consultants and related contract research, facility costs and depreciation. Expenditures relating to research and development are expensed as incurred.

Net Loss Per Share Of Common Stock—Basic net loss per share excludes dilution for potentially dilutive securities and is computed by dividing loss available to common stockholders by the weighted average number of common shares outstanding during the period. 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.

Potentially dilutive securities outstanding are summarized as follows:

	December 31,			March 31,	
	2001	2002	2003	2003	2004
				(unaudited)	
Series A redeemable convertible preferred stock on an as converted basis	890,706	890,706	890,706	890,706	890,706
Series B convertible preferred stock on an as converted basis	642,060	702,867	746,408	702,867	772,623
Series C convertible preferred stock on an as converted basis	—	—	—	—	3,267,954
Stock warrants	161,800	161,800	43,366	43,366	43,366
Common stock options	775,268	1,904,603	2,099,824	2,145,561	2,149,953

Segment Information—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, or decision-making group, 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 entirely in the United States of America.

Exit or Disposal Activities—SFAS No. 146, “Accounting for Costs Associated with Exit or Disposal Activities” is effective for exit or disposal activities that are initiated after December 31, 2002, with early application encouraged. FAS No. 146 addresses financial accounting and reporting for the costs associated with exit or disposal activities and EITF Issue No. 94-3 “Liability Recognition for Certain Employee Termination Benefits and Costs to Exit and Disposal Activity (Including Certain Costs Incurred in a Restructuring)”. SFAS No. 146 requires that a liability for costs associated with an exit or disposal activity be recognized when the liability is incurred and establishes that fair value is the objective for initial measurements of the liability.

Included in general and administrative expense for the year ended December 31, 2003 are approximately \$2,163,000 of costs related to the consolidation of the Company’s separate California facilities into the Company’s Valencia facility. The \$2,163,000 consists of \$1,077,000 in severance costs, \$438,000 in office closure costs and \$648,000 related to the abandonment of fixed assets. Payments of \$1,406,000 have been made as of December 31, 2003. The remaining liability of \$109,000 is included in accrued expenses and other current liabilities at December 31, 2003.

MannKind Corporation and Subsidiary (A Development Stage Company)**NOTES TO FINANCIAL STATEMENTS — (continued)**

Recently Issued Accounting Standards—In January 2003, the Financial Accounting Standards Board (“FASB”) issued Financial Interpretation Number 46, *Consolidation of Variable Interest Entities* (“FIN 46”) with the objective of improving financial reporting by companies involved with variable interest entities. FIN 46 clarifies the application of Accounting Research Bulletin No. 51 to certain entities, defined as variable interest entities, in which equity investors do not have characteristics of a controlling financial interest or do not have sufficient equity at risk for the entity to finance its activities without additional subordinated support from other parties. In December 2003, the FASB issued a revision to FIN 46 (“FIN 46R”) to clarify some of the provisions of FIN 46. The Company currently has no entities which have the characteristics of a variable interest equity. Furthermore, the Company’s adoption of the remaining provisions of FIN 46R in the quarter ended March 31, 2004 did not have an impact on the Company’s financial statements.

In May 2003, the FASB issued SFAS No. 150, *Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity*. This statement establishes how a company classifies and measures certain financial instruments with characteristics of both liabilities and equity, including redeemable preferred stock. This statement is effective for financial instruments entered into or modified after May 31, 2003, and otherwise effective at the beginning of the interim period commencing July 1, 2003, except for mandatory redeemable financial instruments of nonpublic companies, which is effective for fiscal periods beginning after December 31, 2004. Adoption of this statement did not have a material impact on the Company’s financial statements.

3. Investment in securities

The following is a summary of the available-for-sale securities classified as current assets (in thousands).

	December 31, 2002		December 31, 2003		March 31, 2004	
	Cost basis	Fair value	Cost basis	Fair value	Cost basis	Fair value
						(unaudited)
US government securities	\$ 9,336	\$ 9,336	\$ 518	\$ 518	\$1,937	\$1,937
Corporate debt instruments	1,799	1,799	1,307	1,307	1,257	1,257
	<u>\$11,135</u>	<u>\$11,135</u>	<u>\$1,825</u>	<u>\$1,825</u>	<u>\$3,194</u>	<u>\$3,194</u>

The maturity dates for debt securities at December 31, 2002 and 2003, and March 31, 2004, is less than one year. Proceeds from the sale and maturities of available-for-sale securities amounted to approximately \$59,853,000, \$59,294,000 and zero for the years ended December 31, 2002 and 2003, and for the three months ended March 31, 2004, respectively. Gross realized losses for available-for-sale securities were approximately \$(67,000), \$(76,000) and zero for the year ended December 31, 2002 and 2003, and for the three months ended March 31, 2004, respectively. Gross realized gains for available-for-sale securities were insignificant for the years ended December 31, 2002 and 2003, and for the three months ended March 31, 2004. Gross realized gains and losses for available-for-sale securities are recorded as other income (expense). Unrealized gains and losses for available-for-sale securities for all periods presented were not material.

MannKind Corporation and Subsidiary (A Development Stage Company)**NOTES TO FINANCIAL STATEMENTS — (continued)****4. Property and equipment**

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

	Estimated useful life (years)	December 31,		March 31,
		2002	2003	2004
Land	—	\$ 5,273	\$ 5,273	\$ 5,273
Buildings	39	9,566	9,566	9,566
Building improvements	5–39	29,089	36,296	36,637
Machinery and equipment	3–10	17,304	16,530	17,615
Furniture, fixtures and office equipment	7–10	3,101	2,234	1,874
Computer equipment and software	3–5	2,181	3,048	3,092
Leasehold improvements		1,816	627	627
Construction in progress		4,630	789	989
Deposits on equipment		8,125	5,656	5,656
		81,085	80,019	81,329
Less accumulated depreciation and amortization		(8,410)	(12,696)	(14,448)
Property and equipment — net		\$72,675	\$ 67,323	\$ 66,881

Depreciation and amortization expense for the years ended December 31, 2001, 2002, 2003, three months ended March 31, 2003 and 2004, and the cumulative period from February 14, 1991 (date of inception) to March 31, 2004 was \$1,350,000, \$5,072,000, \$7,657,000, \$2,113,000, \$1,769,000 and \$17,836,000, respectively.

5. Accrued expenses and other current liabilities

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

	December 31,		March 31,
	2002	2003	2004
Salary and related expenses	\$ 846	\$2,004	\$2,403
Research and clinical trial costs	417	1,224	2,098
Other	494	787	446
Accrued expenses and other current liabilities	\$1,757	\$4,015	\$4,947

6. Notes receivable from stockholders

During the year ended December 31, 2000, the Company issued an aggregate of 238,000 shares of common stock to an executive of CTL and a consultant of CTL in exchange for full recourse notes receivable of \$1,179,000 each, for an aggregate amount of \$2,358,000. The notes bear interest at fixed rates and are payable in five years. The notes are prepayable at the option of the note holder. The notes are collateralized by the underlying common stock. The note holders have no further obligation

MannKind Corporation and Subsidiary (A Development Stage Company)**NOTES TO FINANCIAL STATEMENTS — (continued)**

to provide services to the Company under the terms of the stock purchases. The notes bear fixed rates of interest that were less than market rates of interest available for similar loans of similar amounts and terms from a third party; consequently, the Company recognized compensation expense equal to the discount on the notes based on market rates of interest and the terms of the notes. The total discount on the notes of \$241,000 was expensed to general and administrative expense during the year ended December 31, 2000 as the note holders had no further obligation to the Company. During the year ended December 31, 2002, the executive of CTL paid his \$1,179,000 note in full along with \$135,000 of accrued interest.

Notes receivable reflected in stockholders' equity consist of the following:

	December 31,		March 31,
	2002	2003	2004
Principal	\$1,179,000	\$1,179,000	(unaudited) \$1,179,000
Accrued interest	131,000	233,000	259,000
Total	<u>\$1,310,000</u>	<u>\$1,412,000</u>	<u>\$1,438,000</u>

In December 2001, the Company's majority stockholder entered into an agreement (the "Put" agreement) with the executive of CTL that permits the executive to require the majority stockholder to purchase approximately 119,000 shares from the executive with the note receivable for a fixed price of approximately \$2,949,000, or \$24.75 per share. In accordance with SEC Staff Accounting Bulletin Topic 5.T, *Accounting for Expenses or Liabilities Paid by Principal Stockholder*, the Company recorded the Put obligation of the majority stockholder as common stock subject to repurchase and as a decrease in additional paid-in capital. In February 2002 the executive exercised a portion of the Put for approximately \$1,921,000 (77,667 shares), which was paid in cash by the majority stockholder. The Company reflected the partial redemption of the Put by the majority stockholder as a decrease in common stock subject to repurchase and an increase in additional paid-in capital. The executive resigned in September 2002 and, pursuant to a post-employment agreement that was formalized and executed in January 2003, the Company modified the terms of options to purchase 30,317 shares of common stock held by the former executive (see Note 12—Severance agreements) and assumed the majority stockholder's remaining Put obligation of approximately \$1,028,000. The remaining \$1,028,000 of the Put (41,333 shares) was exercised in December 2002 and paid in cash by the Company in January 2003. During the year ended December 31, 2002, the estimated fair value per share of the Company's common stock declined below the exercise price of the Put. As a result, during the year ended December 31, 2002 the Company recorded \$405,000 of stock-based compensation expense, which was the difference between the amount paid to the former executive and the amount received from the majority stockholder and represented the intrinsic value of the 41,333 shares subject to the Put. In December 2003, the majority stockholder purchased the 41,333 shares for an aggregate price of approximately \$623,000.

The Company issued 110,000 shares of common stock to an executive of AlleCure in exchange for notes receivable, in the amounts of \$1,214,000 during the year ended December 31, 2000 and \$750,000 during the year ended December 31, 2001. The notes bear interest at fixed rates and are payable in five years. The notes are pre-payable at the option of the note holder. The notes are collateralized by the underlying common stock. The note holder has no further obligation to the Company under the terms of the stock purchase. During the first quarter of 2003, the executive was terminated by the Company (See Note 12—Severance agreements). The note-for-stock transactions are

MannKind Corporation and Subsidiary (A Development Stage Company)

NOTES TO FINANCIAL STATEMENTS — (continued)

being accounted for as in-substance stock option grants to an employee. The in-substance stock option grants had no intrinsic value as of the transaction dates. The pre-payment feature of the notes results in the exercise price of the in-substance stock option being unknown until the notes are paid in full. Accordingly, the Company is required to measure the intrinsic value of the in-substance stock options on the balance sheet date of each financial reporting period. During 2001, the Company recorded approximately \$815,000 of stock-based compensation expense, which is included in general and administrative expense, relating to the in-substance stock options. This amount was reversed in 2002 because the in-substance stock options had no intrinsic value as of December 31, 2002. There was no stock-based compensation expense recorded for the in-substance options in 2003 because they had no intrinsic value as of December 31, 2003.

During the year ended December 31, 2000 and during the year ended December 31, 2001, the Company issued an aggregate 701,333 shares of common stock to various consultants in exchange for notes receivable aggregating approximately \$10,923,000. The notes bear interest at fixed rates and are payable in five years. The notes are pre-payable at the option of the note holders. The notes are collateralized by the underlying common stock. The note holders have no further obligation to the Company under the terms of the stock purchases. The note-for-stock transactions are being accounted for as in-substance stock option grants to non-employees. Since the in-substance stock options were 100% vested and nonforfeitable upon issuance, a measurement date is deemed to have occurred on the issuance date. Accordingly, the Company recorded stock-based compensation expense equal to the estimated fair value of the in-substance options of \$8,372,000 in 2000 and \$15,000 in 2001. These amounts, which are included in research and development expense in the accompanying statements of operations, were estimated using the Black-Scholes option-pricing model and the following weighted-average assumptions: volatility of 100%, term of five years, interest rate of 5.06%.

7. Notes receivable from officers

In March 2003, a limited liability company controlled by the Company's majority stockholder loaned the aggregate principal sum of \$225,000 to two officers pursuant to promissory notes and purchased the principal residence owned by one officer as part of his relocation to California. In accordance with SEC Staff Accounting Bulletin Topic 5.T, *Accounting for Expenses or Liabilities Paid by Principal Stockholder*, the Company recorded the loans from the majority stockholder as an increase in additional paid-in capital and as a note receivable, which is classified within stockholders' equity. In addition, \$70,000 was recorded as compensation expense with a corresponding credit to additional paid-in capital representing the amount of the residential purchase price paid to one officer that exceeded the appraised value. This \$70,000 is included in general and administrative expenses on the Company's statement of operations for the year ended December 31, 2003. The notes bear fixed rates of interest that were less than market rates of interest available for similar loans of similar amounts and terms from a third party. Consequently, the Company also recognized a non-cash compensation expense equal to the discount on the notes. The total discount on the notes of approximately \$14,000 was amortized to compensation expense over the term of the note. The notes are secured by the officers' title and interest in future bonus payments, if any, from the Company. As of March 31, 2004, the amount owed to the lender pursuant to the notes receivable was \$153,000, including accrued interest. As of April 15, 2004, both notes had been fully repaid.

MannKind Corporation and Subsidiary (A Development Stage Company)**NOTES TO FINANCIAL STATEMENTS — (continued)****8. Deferred compensation**

Certain stockholders and officers elected to defer part or all of their compensation from 1991 through 1998 due to cash flow difficulties in those years. The amounts due for deferred compensation are non interest-bearing with no repayment terms.

Deferred compensation consists of the following (in thousands):

	December 31,		March 31,
	2002	2003	2004
Deferred compensation to stockholders and officers	\$1,864	\$1,644	(unaudited) \$1,644
Less non-current portion	—	(284)	(284)
Deferred compensation—current	\$1,864	\$1,360	\$1,360

In February 2003, pursuant to a settlement agreement with one of the officers, the Company agreed to pay the deferred compensation amount outstanding to the former officer in the amount of approximately \$775,000 in three payments. As of December 31, 2003 the Company has paid approximately \$220,000 of this amount. An additional \$271,000 is due in April 2004 and the remaining \$284,000 is due in April 2005. The settlement also obligated the Company to make certain severance related payments which are more fully described in Note 12—Severance agreements.

9. Common and preferred stock

Common Stock—The Company is authorized to issue 100,000,000 shares of common stock. As of March 31, 2004, 19,975,141 shares of common stock are issued and outstanding.

The Company had reserved shares of common stock for issuance as follows:

	December 31, 2003	March 31, 2004
Common stock options	2,099,825	(unaudited) 2,149,953
Conversion of Series A preferred stock	890,706	890,706
Conversion of Series B preferred stock	746,408	772,622
Conversion of Series C preferred stock	—	3,267,954
Exercise of warrants	43,366	43,366
	3,780,305	7,124,601

Preferred Stock—The Company is authorized to issue 5,000,000 shares of preferred stock.

Liquidation Preferences of Preferred Stock—In the event of liquidation, dissolution or winding-up of the Company, the Series C convertible preferred stockholders shall be entitled to receive in preference to the common stockholders, Series A redeemable convertible preferred stockholders and the Series B convertible preferred stockholders, a per share amount equal to \$51.00 plus all declared and unpaid dividends. After such distributions have been made, the Series A redeemable convertible preferred stockholders and the Series B convertible preferred stockholders shall be entitled to receive on an equal basis, in the case of the Series A redeemable convertible preferred stockholders, a per share amount equal to \$16.22, plus all accrued and unpaid dividends (whether or not declared) and, in the case of

MannKind Corporation and Subsidiary (A Development Stage Company)

NOTES TO FINANCIAL STATEMENTS — (continued)

the Series B convertible preferred stockholders, a per share amount equal to \$77.88, plus all declared and unpaid dividends. After such distributions have been made, the Series C convertible preferred stockholders and the common stockholders shall be entitled to receive on a pro rata basis a distribution per share equivalent to that made to the Series A redeemable convertible preferred stockholders. After such distributions have been made, any remaining assets of the Company will be distributed pro rata among the Series A redeemable convertible preferred stockholders, Series C convertible preferred stockholders and the common stockholders based on the number of common shares held by each, assuming conversion of all convertible preferred stock at the then applicable conversion rate.

Series A Redeemable Convertible Preferred Stock—As of December 31, 2003, the Company had outstanding 267,212 shares of 5.12% cumulative dividend Series A redeemable convertible preferred stock. The rights, preferences and privileges of the holders of Series A redeemable convertible preferred stock are as follows:

- Each share of Series A redeemable convertible preferred stock is convertible into approximately 3.3 shares of common stock (subject to adjustment in the event of the issuance of common stock below a price per share of \$4.86 and subject to proportionate adjustment for stock dividends, stock subdivisions, stock redivisions, reverse stock splits and stock consolidations). Shares will automatically be converted in the event of a public offering of common stock in which the aggregate net proceeds equal or exceed \$20 million, the price paid in such offering reflects a pre-offering valuation of at least \$30 million and the common stock is approved for quotation on the Nasdaq National Market or certain other stock exchanges. The Series A convertible preferred stock offering was determined not to contain a beneficial conversion feature on the offering commitment date. However, if the conversion price is adjusted downward at a future date a beneficial conversion charge would be recorded by the Company as a reduction in retained earnings or, in the absence of retained earnings, additional paid-in capital, and an increase in additional paid-in capital. In the period of the charge, if any, net income applicable to common stockholders and net income per share would be reduced.
- At any time following September 30, 2002, within 30 days of a written request by a Series A redeemable convertible preferred stockholder, the Company shall redeem for cash a sum equal to the redemption value of \$16.22 per share, together with all unpaid cumulative dividends. The cumulative dividends for Series A redeemable convertible preferred stock are accrued annually so that the carrying value will equal the redemption amount on September 30, 2002 and thereafter. In addition, differences between the redemption amount and the net proceeds received (i.e., the costs of financing) were accreted through September 30, 2002.
- Each share of Series A redeemable convertible preferred stock has the same voting rights as the common stock into which it is convertible.
- Dividends may be declared at the discretion of the board of directors and are cumulative. Per annum dividends of \$0.83 per share of Series A redeemable convertible preferred stock must be declared and paid before any dividends on common stock may be declared or paid.

Series B Convertible Preferred Stock—As of December 31, 2003, the Company had outstanding 192,618 shares of Series B convertible preferred stock. The rights, preferences and privileges of the holders of Series B convertible preferred stock are as follows:

- Each share of Series B convertible preferred stock was initially convertible into approximately 3.3 shares of common stock, adjusted for dilution as defined. The holders of the Series B

NOTES TO FINANCIAL STATEMENTS — (continued)

convertible preferred stock will be entitled to a weighted-average antidilution adjustment to the conversion price in the event that the Company issues equity securities for an effective purchase price of less than \$23.37 per share (on an as-if-converted-to-common stock basis) in an equity financing. The conversion price will also be subject to proportionate adjustment for stock subdivisions, stock combinations and stock dividends. Shares will automatically be converted on the date of an underwritten public offering in which the gross proceeds are at least \$15 million. The Series B convertible preferred stock offering was determined not to contain a beneficial conversion feature on the offering commitment date. However, during the years ended December 31, 2002 and 2003 and the three months ended March 31, 2004, the conversion price was adjusted downward to \$21.33 per share as of December 12, 2002, \$20.10 per share as of approximately December 31, 2003, and \$19.41 per share as of approximately March 31, 2004 resulting in a beneficial conversion charge to common stockholders of approximately \$1,421,000, \$1,017,000, and \$612,000, respectively. These charges have been reflected by the Company as both a reduction and increase in additional paid-in capital during the respective periods. Although the charges have no net effect on stockholders' equity, they increase the net loss applicable to the common stockholders and net loss per share. If the conversion price is adjusted downward at a future date a beneficial conversion charge would be recorded by the Company as a reduction in retained earnings or, in the absence of retained earnings, additional paid-in capital, and an increase in additional paid-in capital. In the period of the charge, if any, net income applicable to common stockholders and net income per share would be reduced.

- Each share of Series B convertible preferred stock has the same voting rights as the common stock into which it is convertible.
- Dividends may be declared at the discretion of the board of directors. Dividends are not cumulative but must be simultaneously declared and paid with dividends declared and paid on common stock.

Series C Convertible Preferred Stock—In December 2003, the Company issued stock subscriptions receivable in the aggregate amount of \$50,000,000 for 980,392 shares of Series C convertible preferred stock. All of the 980,392 shares of Series C convertible preferred stock were issued in the first quarter of 2004. Approximately \$31,847,000 of the \$50,000,000 in stock subscriptions were collected in December 2003. The remaining stock subscription receivable of approximately \$18,153,000 as of December 31, 2003 was collected during the first quarter of 2004. The rights, preferences and privileges of the holders of Series C convertible preferred stock are as follows:

- Each share of Series C is convertible into approximately 3.3 shares of common stock, adjusted for dilution as defined. Shares will automatically be converted on the date of an underwritten public offering of common stock in which the Company receives gross proceeds of \$60 million or upon the affirmative election of the holders of a majority of the outstanding shares of the Series C convertible preferred stock. The holders of the Series C convertible preferred stock will be entitled to a weighted-average antidilution adjustment to the conversion price in the event that the Company issues equity securities for an effective purchase price of less than \$15.30 per share (on an as-if-converted-to-common stock basis) in an equity financing. In addition, if, on or before May 1, 2005, the Company issues equity securities in one or more financings and the consideration to the Company in such financings, in the aggregate, is \$60,000,000 or greater, then the conversion price of the Series C convertible preferred stock will automatically adjust to an adjusted price equal to 80% of the volume weighted-average sale price per share of all of the securities issued in such financing(s) (on an as-if-converted-to-common stock basis) if such adjusted

NOTES TO FINANCIAL STATEMENTS — (continued)

price is less than the then-effective conversion price of the Series C convertible preferred stock. The conversion price will also be subject to proportional adjustment for stock splits, stock dividends and the like. The Series C convertible preferred stock was determined not to have any beneficial conversion value upon issuance since the initial effective conversion price of \$15.30 per share on an as-if-converted-to-common stock basis was greater than the estimated fair value per share of the common stock into which the Series C convertible preferred stock was convertible offering commitment date. However, if the conversion price is adjusted downward at a future date a beneficial conversion charge would be recorded by the Company as a reduction in retained earnings or, in the absence of retained earnings, additional paid-in capital, and an increase in additional paid in-capital. In the period of the charge, if any, net income applicable common stockholders and net income per share would be reduced.

- Each share of Series C has the same voting rights as the common stock into which it is convertible.
- Dividends may be declared at the discretion of the board of directors. Dividends are not cumulative but must be simultaneously declared and paid with dividends declared and paid on common stock.

10. Stock option plans

The Company's 2001 Stock Awards Plan (the "Plan") provides for the granting of stock options to directors, employees and consultants. The Company has reserved 5,000,000 shares of common stock for issuance under the Plan. During 2002, the Board approved the issuance of 3,333 shares of common stock to an employee. These shares, which were valued at \$84,000 and recorded as compensation expense in 2002, reduced the number of shares available for issuance under the Plan. As of December 31, 2003, 1,299,262 options were outstanding under the Plan. As of March 31, 2004, 1,356,043 options were outstanding under the plan. The Company has two other stock award plans: the 1991 Stock Option Plan (the "1991 Plan") and the 1999 Stock Plan (the "1999 Plan"). Both of these plans provide for the granting of stock options to directors, employees and consultants. As of both December 31, 2003 and March 31, 2004, 126,500, and 126,099, respectively, options were outstanding under the 1991 Plan and 305,430 options were outstanding under the 1999 Plan. There are no additional shares available for issuance under the 1991 Plan and the 1999 Plan at December 31, 2003 or March 31, 2004.

Prior to the merger of CTL and AlleCure into the Company, CTL had granted options to purchase shares of its common stock under its 2000 Stock Option and Stock Plan (the "CTL Plan"). Similarly, AlleCure had granted options to purchase shares of its common stock under its 2000 Stock Option and Stock Plan (the "AlleCure Plan"). Pursuant to the plans of reorganization and agreements of merger between the Company and each of CTL and AlleCure, the Company has assumed the obligation to issue shares of the Company's common stock, at the exchange ratio agreed to in the merger agreement, upon the exercise of options granted under the CTL Plan and the AlleCure Plan. After the merger date, no further options were granted under either the CTL Plan or AlleCure Plan. As of December 31, 2003 there were an aggregate of 127,661 options outstanding under these plans. As of March 31, 2004 there were an aggregate of 121,409 options outstanding under these plans. The assumption of options issued by CTL and AlleCure by the Company in connection with the merger on December 12, 2001 resulted in a new measurement date. On this date, the outstanding options had an intrinsic value of approximately \$2,528,000. Approximately \$632,000 of the \$2,528,000 related to vested options and was therefore recorded immediately as compensation expense. The remaining amount of the \$2,528,000 related to unvested options and is being amortized to stock-based

MannKind Corporation and Subsidiary (A Development Stage Company)

NOTES TO FINANCIAL STATEMENTS — (continued)

compensation expense over the remaining vesting period. During the years ended December 31, 2001, 2002, 2003, the cumulative period from February 14, 1991 (date of inception) to December 31, 2003 and the three months ended March 31, 2004, \$632,038, \$632,038, \$274,532, \$1,538,608 and \$53,727, respectively, was recognized as stock-based compensation expense related to these options. As of March 31, 2004, assuming no options are cancelled or expired in future periods, the remaining intrinsic value to be amortized is approximately \$161,000.

The Company's Board of Directors approved certain option grants outside of the Company's 2001 Stock Awards Plan. During the year ended December 31, 2002, an employee who is also a majority stockholder was granted 240,972 options at an exercise price of \$25.23 per share. The options vest annually over four years. These options were outstanding at December 31, 2003 and March 31, 2004 and are included in the tables below.

The following table summarizes information about stock options outstanding:

	Year ended December 31,						Three months ended	
	2001		2002		2003		March 31, 2004	
	Options	Weighted average exercise price	Options	Weighted average exercise price	Options	Weighted average exercise price	(unaudited) Options	Weighted average exercise price
Options outstanding at the beginning of the period	632,589	7.23	775,268	10.53	1,904,603	17.52	2,099,825	10.29
Granted	174,172	23.28	1,222,675	22.11	1,664,886	9.36	74,333	8.61
Exercised	(1,549)	8.49	(17,771)	5.49			(526)	7.80
Canceled	(29,944)	15.12	(75,569)	20.58	(1,469,664)	18.57	(23,679)	14.40
Options outstanding at the end of the period	775,268	10.53	1,904,603	17.52	2,099,825	10.29	2,149,953	10.20
Options exercisable at the end of the period	644,899	9.06	636,937	10.08	728,590	9.96	765,464	10.74

The weighted-average exercise prices and weighted-average fair values of options granted are as follows:

	Year ended December 31,						Three months ended	
	2001		2002		2003		March 31, 2004	
	Weighted average exercise price	Weighted average fair value	Weighted average exercise price	Weighted average fair value	Weighted average exercise price	Weighted average fair value	(unaudited) Weighted average exercise price	Weighted average fair value
Option Price equal to estimated fair value	23.34	19.14	25.23	21.42	—	—	—	—
Option Price greater than estimated fair value	25.23	20.22	—	—	—	—	—	—
Option Price less than estimated fair value	13.23	20.22	12.75	13.11	9.36	11.55	8.61	11.07

MannKind Corporation and Subsidiary (A Development Stage Company)**NOTES TO FINANCIAL STATEMENTS — (continued)**

The following table summarizes information about stock options outstanding at December 31, 2003:

Grant price range	Options outstanding	Weighted-average remaining contractual life (years)	Weighted-average exercise price	Options exercisable	Weighted-average exercise price
\$0.33–\$7.95	1,636,568	5.66	\$7.29	478,792	\$5.70
\$9.90–\$12.75	136,223	3.12	\$12.18	120,966	\$12.21
\$12.99–\$15.57	4,744	7.62	\$14.64	3,460	\$14.40
\$21.12–\$25.23	322,290	7.41	\$24.69	125,372	\$23.97
	<u>2,099,825</u>	5.77	\$10.29	<u>728,590</u>	\$9.96

The following table summarizes information about stock options outstanding at March 31, 2004 (unaudited):

Grant price range	Options outstanding	Weighted-average remaining contractual life (years)	Weighted-average exercise price	Options exercisable	Weighted-average exercise price
\$0.33–\$7.95	1,657,914	5.50	\$7.29	478,559	\$5.70
\$9.18–\$12.75	174,351	4.35	\$11.49	120,119	\$12.21
\$12.99–\$15.57	4,744	7.37	\$14.64	3,460	\$14.40
\$21.12–\$25.23	312,944	7.19	\$24.75	163,326	\$24.42
	<u>2,149,953</u>	5.66	\$10.20	<u>765,464</u>	\$10.74

For employee options, the difference between the estimated fair value of the underlying stock and the option exercise price is recognized as compensation expense over the vesting period in accordance with APB Opinion No. 25. For non-employee options, the Company recognizes stock-based compensation expense for the estimated fair value of the options, determined using the Black-Scholes option-pricing model, in accordance with EITF No. 96-18 and FIN 28. During the year ended December 31, 2001, non-employee stock-based compensation expense of approximately \$75,000 was recognized for outstanding non-employee options. During the year ended December 31, 2002, previously recorded non-employee stock-based compensation expense of approximately \$14,000 was reversed because of a decline in the estimated fair value of the Company's common stock underlying the non-employee options. During the year ended December 31, 2003, non-employee stock based compensation expense of approximately \$277,000 was recognized for outstanding non-employee options. During the three months ended March 31, 2004, previously recorded non-employee stock based compensation expense of approximately \$1,000 was reversed. As of December 31, 2003, non-employee options to purchase 36,837 shares of the Company's common stock at a weighted-average exercise price of \$6.39 per share were outstanding and are reflected in the tables above. The in-substance stock options disclosed in Note 6, which resulted from the issuance of stock to certain individuals, are excluded from the tables above.

In January 2003, pursuant to a post-employment agreement with a former CTL executive, options to purchase 30,317 shares of common stock for \$21.12 per share remain fully exercisable through January 2006. The change in option terms resulted in a new measurement date. Since the stock option

MannKind Corporation and Subsidiary (A Development Stage Company)

NOTES TO FINANCIAL STATEMENTS — (continued)

was modified in connection with the former executive's post-employment activities to be provided through September 2003, stock-based compensation expense was recorded in 2003 in the amount of approximately \$255,000, which was estimated using the Black-Scholes options pricing model.

In October 2003, pursuant to a settlement agreement with MannKind's former Chief Executive Officer, options to purchase 83,333 shares of common stock were immediately vested and remain fully exercisable through April 2005. The change in option terms resulted in a new measurement date. On the date of the agreement, the outstanding options had an intrinsic value of approximately \$153,000 that was recorded immediately as compensation expense.

In November 2003, pursuant to a settlement agreement with a former employee, options to purchase 5,000 shares of common stock were immediately vested and remain fully exercisable through May 2004. The change in option terms resulted in a new measurement date. On the date of the agreement, the outstanding options had an intrinsic value of approximately \$25,000 that was recorded immediately as compensation expense.

During the year ended December 31, 2003, the Company extended the exercise period for certain employee options to purchase 174,855 shares of common stock at an exercise price of \$6.24 per share. Also, in February 2003, pursuant to a settlement agreement with a former executive, the Company agreed that options to purchase 124,553 shares of common stock would remain exercisable at least until April 2006 (see Note 12). The Company recorded compensation expense of approximately \$2,502,000 in the year ended December 31, 2003 associated with all of these options. No additional compensation expense was incurred in the three months ended March 31, 2004.

On October 7, 2003, the Company's board of directors approved a re-pricing program for certain outstanding options to purchase shares of the Company's common stock granted under each of its stock plans. Under the re-pricing program, each holder of outstanding options granted under the stock plans who was an employee of the Company on November 5, 2003 could elect to exchange up to all of their outstanding options with an exercise price greater than \$7.95 for re-priced stock options with an exercise price of \$7.95 per share and a term of four years. The option re-pricing became effective on November 5, 2003. Vesting restarted immediately with 50% vesting in November 2004 and the remaining 50% vesting monthly until fully vested in November 2005. Employees who voluntarily resign in the 12-month period beginning November 5, 2003 will forfeit their re-priced options. Employees who are involuntarily terminated in the 12-month period beginning November 5, 2003 will vest 50% upon termination. In accordance with the terms of the re-pricing program, on November 5, 2003 the Company canceled 781,572 outstanding stock options with a weighted average exercise price of \$19.83 per share and issued, in exchange for the canceled options, 781,572 new options with an exercise price of \$7.95 per share. Compensation cost for all options re-priced under the re-pricing program will be re-measured, using the intrinsic value method proscribed by APB No. 25, on a quarterly basis until the options are exercised, canceled or expire. Compensation cost for these options are recognized in accordance with the method prescribed by FIN 28. Since the amount of compensation cost attributable to the re-priced options is dependent on the fair value of the Company's common stock underlying the options on the future re-measurement dates, the amount of stock-based compensation recognized in any given future period cannot be predicted and may have a material impact on the Company's results of operations. For the year ended December 31, 2003, the Company recorded \$595,000 in stock-based compensation expense related to the re-pricing program. For the three months ended March 31, 2004, the Company recorded approximately \$955,000 in stock based compensation expense relating to the re-pricing program.

MannKind Corporation and Subsidiary (A Development Stage Company)**NOTES TO FINANCIAL STATEMENTS — (continued)**

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

	Year ended December 31,			Three months ended March 31,	
	2001	2002	2003	2003	2004
				(unaudited)	
Employee related	\$1,445	\$366	\$4,224	\$3,060	\$1,196
Consultant related	120	(14)	277	(76)	(1)
Total	\$1,565	\$352	\$4,501	\$2,984	\$1,195

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

	Year ended December 31,			Three months ended March 31,	
	2001	2002	2003	2003	2004
				(unaudited)	
Research and development	\$ 562	\$ 602	\$ 961	\$ 444	\$ 386
General and administrative	1,003	(250)	3,540	2,540	809
Total	\$1,565	\$ 352	\$4,501	\$2,984	\$1,195

11. Warrants

Warrants were issued during the years ended December 31, 1995 and 1996 to purchase shares of common stock. As of December 31, 2003 and March 31, 2004, warrants to purchase 43,366 shares of common stock were outstanding and exercisable at a weighted average exercise price of \$50.67 per share. The outstanding warrants range in price from \$49.80 to \$65.36 per share and expire at various dates through 2007.

On March 30, 2001, CTL issued a warrant to its majority stockholder in conjunction with the purchase of the Company's common stock. Pursuant to the plan of reorganization and agreement of merger between the Company and CTL, the Company assumed an obligation to issue 118,424 shares of its common stock upon the exercise of this warrant. The exercise price of the warrant, as adjusted by the merger, is \$21.12 per share of common stock. The warrants remained outstanding as of December 31, 2002 and expired unexercised on March 31, 2003.

12. Commitments and contingencies

Operating Leases—The Company leases certain facilities and equipment under various operating leases, which expire at various dates through December 31, 2005. Future minimum rental payments, required under operating leases, are as follows at December 31, 2003 (in thousands):

Year ending December 31,	
2004	\$596
2005	61
2006	36
Total minimum lease payments	\$693

Rent expense under all operating leases for the years ended December 31, 2001, 2002 and 2003, was approximately \$849,000, \$851,000 and \$1,241,195, respectively.

MannKind Corporation and Subsidiary (A Development Stage Company)

NOTES TO FINANCIAL STATEMENTS — (continued)

Capital Leases—The Company’s capital leases were not material for the years ended December 31, 2001, 2002 and 2003.

Litigation—The Company is subject to various claims and legal actions that arise in the ordinary course of business. In the opinion of management, the ultimate resolution of such matters will not have a material adverse impact on the Company’s financial position or results of operations.

Guarantees and Indemnifications—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 Company may terminate the indemnification agreements with its officers and directors upon 90 days written notice, but termination will not affect claims for indemnification relating to events occurring prior to the effective date of termination. 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. Accordingly, the Company has not recorded any liabilities for these agreements as of December 31, 2003.

Severance Agreements—In February 2003, pursuant to a settlement agreement, the Company is obligated to pay a former executive approximately \$1,049,000 over three years, comprised of approximately \$775,000 in deferred compensation (see Note 8) from prior years and the remainder comprised of other severance-related items. As of December 31, 2003 the Company has paid approximately \$451,000 of this amount. An additional \$271,000 is due in April 2004, \$43,000 is due in September 2004 and the remaining \$284,000 is due in April 2005. The settlement agreement further provides that the options held by the former executive to purchase up to 46,585 shares of the Company’s common stock remain fully exercisable through April 2007, and options to purchase up to 124,553 shares of the Company’s common stock remain fully exercisable until at least April 2006. The change in option terms resulted in a new measurement date. On the date of the agreement, the outstanding options had an intrinsic value of approximately \$1,091,000, which was immediately expensed as part of the \$2,502,000 charge more fully described in Note 10.

In February 2003, pursuant to a settlement agreement, the Company became obligated to pay a former employee his base salary at the rate of approximately \$22,000 per month through December 2003, and a lump sum payment of \$67,000 in February 2005, which is included in accrued expenses in the accompanying balance sheet at December 31, 2003.

In October 2003, under the terms of a severance agreement with its former Chief Executive Officer, the Company paid a severance payment of \$165,000 and agreed to pay his base salary at the rate of approximately \$28,000 per month through April 2005. The agreement also provides for accelerated vesting of an option held by the former executive permitting him to purchase up to 83,333 shares of the Company’s common stock until April 7, 2005 (see Note 10).

13. Employee benefit plans

During 1999, CTL established a 401(k) Savings Retirement Plan (the “CTL Retirement Plan”) for CTL. The CTL Retirement Plan covered substantially all full-time employees who met the CTL Retirement Plan’s eligibility requirements and provides for employee elective contributions with a Company-match provision. For the year ended December 31, 2001, the Company contributed \$60,000 to the CTL Retirement Plan.

MannKind Corporation and Subsidiary (A Development Stage Company)**NOTES TO FINANCIAL STATEMENTS — (continued)**

During 2000, AlleCure established a 401(k) Savings Retirement Plan (the “AlleCure Retirement Plan”) for AlleCure. The AlleCure Retirement Plan covered substantially all full-time employees who met the AlleCure Retirement Plan’s eligibility requirements and provided for employee elective contributions with a Company-match provision. For the year ended December 31, 2001, the Company contributed \$29,000 to the AlleCure Retirement Plan.

During the year ended December 31, 2002, PDC established a 401(k) Savings Retirement Plan (the “PDC Retirement Plan”) for PDC. Immediately after its establishment, the PDC Retirement Plan, CTL Retirement Plan and AlleCure Retirement Plan were converted to the 401(k) Savings Retirement Plan (the “MannKind Retirement Plan”) for the Company. For the years ended December 31, 2003 and 2002 and three months ended March 31, 2004, the Company contributed \$235,000, \$224,000, and \$62,000, respectively, to the MannKind Retirement Plan.

14. Income taxes

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, 2002 and 2003, are approximately as follows (in thousands):

	2002	2003
Deferred Tax Assets:		
Net operating loss carryforwards	\$ 44,962	\$ 66,921
Research and development credits	3,357	3,494
Accrued expenses	2,066	7,592
Start-up costs deduction	12	—
Non-qualified stock option expense	532	2,442
Depreciation	(232)	(416)
	<hr/>	<hr/>
Total gross deferred tax assets	50,697	80,033
Valuation allowance	(50,697)	(80,033)
	<hr/>	<hr/>
Net deferred tax assets	\$ —	\$ —

The Company’s effective income tax rate differs from the statutory federal income tax rate as follows for the years ended December 31, 2002 and 2003:

	December 31,	
	2002	2003
Federal tax benefit rate	34.0%	34.0%
State tax benefit, net of federal benefit	—	—
Permanent items	(24.9)	(0.1)
Other	—	1.6
Valuation allowance	(9.1)	(35.5)
	<hr/>	<hr/>
Effective income tax rate	0.0%	0.0%

As required by SFAS No. 109, management of the Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets. Management has concluded, in

MannKind Corporation and Subsidiary (A Development Stage Company)

NOTES TO FINANCIAL STATEMENTS — (continued)

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. Accordingly, the deferred tax assets have been fully reserved. Management reevaluates the positive and negative evidence on an annual basis. During the years ended December 31, 2002 and 2003, the change in the valuation allowance was \$24,216,000 and \$29,336,000, respectively, for income taxes.

At December 31, 2003, the Company had federal and state net operating loss carryforwards of approximately \$172,507,000 and \$97,008,000 available, respectively, to reduce future taxable income and which will expire at various dates beginning in 2013 through 2023. At December 31, 2003, the Company had research and development credits of \$3,494,000 that expire at various dates through 2017. Ownership changes, as defined in the Internal Revenue Code, including those resulting from the issuance of common stock in connection with the Company's planned initial public offering, may limit the amount of net operating loss and tax credit carryforwards that can be utilized to offset future taxable income or tax liability. The amount of the limitation is determined in accordance with Section 382 of the Internal Revenue Code. Approximately \$16,579,000 of the federal and state net operating loss carryforwards is estimated to be limited under Internal Revenue Code Section 382.

15. Related party transactions

The Company issued 1,773,234 shares of its common stock to related parties during the year ended December 31, 2002 for proceeds of approximately \$27,450,000. The Company issued 3,016,834 shares of its common stock to its majority stockholder during the year ended December 31, 2001 for proceeds of approximately \$76,000,000. In connection with certain of these issuances, the board of directors approved the issuance of a warrant to purchase 118,424 shares of the Company's common stock at \$21.12 per share, which expired unexercised on March 31, 2003.

During the years ended December 31, 2001, 2002 and 2003, the Company paid \$426,000, \$406,000, and \$497,000, respectively, to certain universities to conduct sponsored research programs, including clinical research. Certain stockholders of the Company are employees of these universities and oversee the sponsored research programs.

One stockholder was paid \$242,000 and \$48,000 for consulting services during the years ended December 31, 2002 and 2001, respectively.

In December 2001, the Company's majority stockholder entered into an agreement with an executive of CTL that permitted the executive to require the majority stockholder to purchase shares of the Company's stock held by the executive, for a fixed price of approximately \$2,949,000 (see Note 6).

From September 2001 to December 2002, the Company leased property located in Sylmar, California from Sylmar Biomedical Park LLC, a company controlled by the Company's majority stockholder. During the years ended December 31, 2002 and 2003 and for the period from February 14, 1991 (date of inception) to December 31, 2003, approximately \$39,000, \$20,000 and \$59,000, respectively, was expensed to general and administrative in the accompanying statements of operations in connection with the property leased from Sylmar Biomedical Park LLC.

During the year ended December 31, 2002, while he was one of the Company's directors, MannKind's former Chief Executive Officer provided the Company with consulting services relating to its research and development programs. The Company paid the executive approximately \$124,000 for his services.

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 majority stockholder and other

MannKind Corporation and Subsidiary (A Development Stage Company)**NOTES TO FINANCIAL STATEMENTS — (continued)**

Company employees, the Company utilized the majority stockholder's private aircraft and the Company paid the charter company that manages the aircraft on behalf of the Company's majority stockholder approximately \$441,000 and \$321,000, respectively, for the years ended December 31, 2002 and 2003.

In 2004, the Company engaged one of its directors to provide consulting services related to seeking potential partners in the development and commercialization of the Company's technology. As of March 31, 2004, the Company paid approximately \$37,000 for consulting services rendered.

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 12—Guarantees and indemnifications).

16. Selected quarterly financial data (unaudited)

	Quarter ended			
	Mar 31	Jun 30	Sep 30	Dec 31
(in thousands, except per share data)				
2002				
Net loss	\$ (9,985)	\$(12,262)	\$(15,560)	\$(168,458)
Net loss attributable to common stockholders	\$(10,046)	\$(12,913)	\$(15,790)	\$(169,188)
Basic and diluted net loss per share	\$ (0.82)	\$ (1.03)	\$ (1.10)	\$ (11.48)
Weighted average common shares used to compute net loss per share	12,305	12,491	14,324	14,732
	Mar 31	Jun 30	Sep 30	Dec 31
(in thousands, except per share data)				
2003				
Net loss	\$(20,336)	\$(13,109)	\$(13,870)	\$(18,564)
Net loss attributable to common stockholders	\$(20,396)	\$(14,046)	\$(14,078)	\$(18,629)
Basic and diluted net loss per share	\$ (1.24)	\$ (0.79)	\$ (0.71)	\$ (0.93)
Weighted average common shares used to compute net loss per share	16,466	17,760	19,697	19,975
	Mar 31			
(in thousands, except per share data)				
2004				
Net loss		\$(16,409)		
Net loss attributable to common stockholders		\$(17,085)		
Basic and diluted net loss per share		\$ (0.86)		
Weighted average common shares used to compute net loss per share		19,975		

NOTES TO FINANCIAL STATEMENTS — (continued)

17. Subsequent events

On March 23, 2004, the following actions were approved by the stockholders:

- An amendment and restatement of the Company's 2001 Stock Awards Plan as the 2004 Equity Incentive Plan, which would become effective upon the closing of the IPO.
- The adoption of the 2004 Employee Stock Purchase Plan, which would become effective upon the closing of the IPO.
- The adoption of the 2004 Non-Employee Directors' Stock Option Plan, which would become effective upon the closing of the IPO.



Part II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other expenses of issuance and distribution.

The following table sets forth all costs and expenses, other than underwriting discounts and commissions, payable by the Registrant in connection with the sale of the common stock being registered. All the amounts shown are estimates except for the SEC registration fee, the NASD filing fee and The Nasdaq National Market listing fee.

Description	Amount to be paid
SEC registration fee	\$11,220
NASD filing fee	9,355
Nasdaq Stock Market Listing Application fee	100,000
Blue sky qualification fees and expenses	20,000
Printing and engraving expenses	125,000
Legal fees and expenses	775,000
Accounting fees and expenses	545,000
Transfer agent and registrar fees	5,000
Miscellaneous	9,425
Total	<u>\$1,600,000</u>

Item 14. Indemnification of directors and officers.

We were incorporated under the laws of the State of Delaware. Section 145 of the Delaware General Corporation Law, or DGCL, generally provides that a Delaware corporation may indemnify any person who is, or is threatened to be made, a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation), by reason of the fact that such person is or was an officer, director, employee or agent of such corporation, or is or was serving at the request of such corporation as an officer, director, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation's best interests and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his or her conduct was illegal. A Delaware corporation may also indemnify any person who is, or is threatened to be made, a party to any threatened, pending or completed action or suit by or in the right of the corporation by reason of the fact that such person was a director, officer, employee or agent of such corporation, or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit, provided such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation's best interests, except that no indemnification is permitted without judicial approval if the officer or director is adjudged to be liable to the corporation. Where an officer or director is successful

Part II

on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him or her against the expenses which such officer or director has actually and reasonably incurred. The Registrant's amended and restated certificate of incorporation and amended and restated bylaws provide for the indemnification of directors and officers of the Registrant to the fullest extent permitted under the DGCL.

Section 102(b)(7) of the DGCL permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duties as a director, except for liability:

- for any transaction from which the director derives an improper personal benefit;
- for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- for improper payment of dividends or redemptions of shares; or
- for any breach of a director's duty of loyalty to the corporation or its stockholders.

The Registrant's amended and restated certificate of incorporation and amended and restated bylaws include such a provision. Expenses incurred by any officer or director in defending any such action, suit or proceeding in advance of its final disposition shall be paid by the Registrant upon delivery to the Registrant of an undertaking, by or on behalf of such director or officer, to repay all amounts so advanced if it shall ultimately be determined that such director or officer is not entitled to be indemnified by the Registrant.

As permitted by Delaware law, the Registrant has entered into indemnity agreements with each of its directors and executive officers that require the Registrant to indemnify such persons against any and all expenses (including attorneys' fees), witness fees, damages, judgments, fines, settlements and other amounts incurred (including expenses of a derivative action) in connection with any action, suit or proceeding, whether actual or threatened, to which any such person may be made a party by reason of the fact that such person is or was a director, an officer or an employee of the Registrant or any of its affiliated enterprises, provided that such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the Registrant and, with respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful. The indemnification agreements also set forth certain procedures that will apply in the event of a claim for indemnification thereunder.

At present, there is no pending litigation or proceeding involving a director, officer or key employee of the Registrant as to which indemnification is being sought, nor is the Registrant aware of any threatened litigation that may result in claims for indemnification by any officer or director of the Registrant.

The Registrant has an insurance policy covering its officers and directors with respect to certain liabilities, including liabilities arising under the Securities Act of 1933, as amended, or otherwise.

In connection with this offering, the Registrant entered into an underwriting agreement which provides that the underwriters are obligated, under some circumstances, to indemnify the Registrant's directors, officers and controlling persons against specified liabilities, including liabilities under the Securities Act.

Part II

Reference is made to the following documents filed as exhibits to this Registration Statement regarding relevant indemnification provisions described above and elsewhere herein:

Exhibit document	Number
Form of Underwriting Agreement	1.1
Amended and Restated Certificate of Incorporation	3.1
Amended and Restated Bylaws	3.3
Form of Indemnity Agreement	10.1

Item 15. Recent Sales of Unregistered Securities.

The following list sets forth information regarding all securities sold by us since January 2001. All share amounts have been adjusted to give effect to a one-for-three reverse stock split of our common stock to be effected before the completion of this offering.

- (1) In June and August 2001 we issued and sold an aggregate of 1,351,909 shares of our common stock to the Alfred E. Mann Living Trust for aggregate consideration of \$34 million.
- (2) In December 2001, in connection with our acquisition of CTL, we issued 2,504,928 shares of our common stock to former common stockholders of CTL and 267,212 shares of our Series A preferred stock to the Alfred E. Mann Living Trust and McLean Watson Advisory Inc. in exchange for all of the outstanding shares of Series A preferred stock of CTL ImmunoTherapies Corp. Upon the closing of this offering at an assumed initial public offering price of \$14.00 per share, these shares of Series A preferred stock will be converted into 890,706 shares of our common stock.
- (3) In December 2001, in connection with our acquisition of AlleCure, we issued 3,697,275 shares of our common stock to former common stockholders of AlleCure and 192,618 shares of our Series B preferred stock to the Alfred E. Mann Living Trust in exchange for all of the outstanding shares of Series A preferred stock of AlleCure Corp. Upon the closing of this offering at an assumed initial public offering price of \$14.00 per share, these shares of Series B preferred stock will be converted into 811,400 shares of our common stock.
- (4) In May 2002 we issued and sold an aggregate of 233,849 shares of our common stock to ten accredited investors for aggregate consideration of \$5.9 million.
- (5) In June through December 2002 we issued and sold an aggregate of 3,921,767 shares of our common stock to 93 accredited investors for aggregate consideration of \$58 million.
- (6) In May 2003 we issued and sold an aggregate of 2,838,315 shares of our common stock to Biomed Partners and Biomed Partners II for aggregate consideration of \$40 million.
- (7) In August 2003 we issued and sold an aggregate of 654,879 shares of our common stock to Biomed Partners and Biomed Partners II for aggregate consideration of \$10 million.
- (8) In December 2003 we issued 41,534 shares of our common stock to the Alfred E. Mann Living Trust for aggregate consideration of \$0.6 million.
- (9) In January to March 2004 we issued and sold an aggregate of 980,392 shares of our Series C preferred stock to 38 accredited investors for aggregate consideration of \$50 million. Upon the closing of this offering at an assumed initial public offering price of \$14.00 per share, these shares will be converted into 4,464,266 shares of our common stock.
- (10) Since January 2001, we have granted options under our equity incentive plans to purchase 1,537,210 shares of common stock (net of expirations and cancellations) to

Part II

employees, directors and consultants, having exercise prices ranging from \$7.95 to \$25.23 per share. Of these, options to purchase 19,846 shares of common stock have been exercised for aggregate consideration of \$115,018, at exercise prices ranging from \$4.95 to \$21.12 per share.

The offers, sales, and issuances of the securities described in paragraphs (1) through (10) were deemed to be exempt from registration under the Securities Act in reliance on Rule 506 of Regulation D in that the issuance of securities to the accredited investors did not involve a public offering. The recipients of securities in each of these transactions acquired the securities for investment only and not with a view to or for sale in connection with any distribution thereof and appropriate legends were affixed to the securities issued in these transactions. Each of the recipients of securities in these transactions was an accredited investor under Rule 501 of Regulation D.

The offers, sales and issuances of the securities described in paragraph (11) were deemed to be exempt from registration under the Securities Act in reliance on Rule 701 in that the transactions were under compensatory benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of such securities were our employees, directors or bona fide consultants and received the securities under our equity incentive plans. Appropriate legends were affixed to the securities issued in these transactions. Each of the recipients of securities in these transactions had adequate access, through employment, business or other relationships, to information about us.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

Exhibit number	Description of document
1.1(b)	Form of Underwriting Agreement.
3.1(b)	Registrant's Restated Certificate of Incorporation, as currently in effect.
3.2(b)	Registrant's Certificate of Designation, Preferences and Rights of Series A Preferred Stock, as currently in effect.
3.3(b)	Registrant's Certificate of Designation, Preferences and Rights of Series B Preferred Stock, as currently in effect.
3.4(b)	Registrant's Certificate of Designation, Preferences and Rights of Series C Preferred Stock, as currently in effect.
3.5	Form of Registrant's Amended and Restated Certificate of Incorporation, to be effective upon completion of the offering.
3.6(b)	Amended and Restated By-Laws, as currently in effect.
3.7	Form of Registrant's Amended and Restated Bylaws, to be effective upon completion of the offering.
4.1(a)	Form of Common Stock Certificate.
4.2(b)	Registration Rights Agreement made and entered into as of October 15, 1998 by and among CTL ImmunoTherapies Corp., Medical Research Group, LLC, McLean Watson Advisory Inc. and Alfred E. Mann, as amended.
5.1(a)	Opinion of Cooley Godward LLP.
10.1(b)(c)	Form of Indemnity Agreement entered into between the Registrant and its directors and officers.
10.2(b)(c)	2004 Equity Incentive Plan and Form of Stock Option Agreement thereunder.
10.3(c)	2004 Non-Employee Directors' Stock Option Plan and Form of Stock Option Agreement thereunder.
10.4(b)(c)	2004 Employee Stock Purchase Plan and Form of Offering Document thereunder.
10.5(b)(c)	Executive Severance Agreement, dated August 1, 2003, between the Registrant and Wendell Cheatham.

Part II

Exhibit number	Description of document
10.6(b)(c)	Executive Severance Agreement, dated August 1, 2003, between the Registrant and Hakan Edstrom.
10.7(b)(c)	Executive Severance Agreement, dated August 1, 2003, between the Registrant and David Thomson.
10.8(b)(c)	Executive Severance Agreement, dated August 1, 2003, between the Registrant and Dick Anderson.
10.9(b)(c)	Executive Severance Agreement, dated August 1, 2003, between the Registrant and Dan Burns.
10.10(b)(c)	Change of Control Agreement, dated August 1, 2003, between the Registrant and Wendell Cheatham.
10.11(b)(c)	Change of Control Agreement, dated August 1, 2003, between the Registrant and Hakan Edstrom.
10.12(b)(c)	Change of Control Agreement, dated August 1, 2003, between the Registrant and David Thomson.
10.13(b)(c)	Change of Control Agreement, dated August 1, 2003, between the Registrant and Dick Anderson.
10.14(b)(c)	Change of Control Agreement, dated August 1, 2003, between the Registrant and Dan Burns.
10.15(b)(d)	Supply Agreement made on January 1, 2000 by and between Diosynth B.V. and Pharmaceutical Discovery Corporation.
10.16	Pharmaceutical Discovery Corporation 1991 Stock Option Plan.
10.17	Pharmaceutical Discovery Corporation 1999 Stock Plan and Form of Stock Option Plan thereunder.
10.18	AlleCure Corp. 2000 Stock Option and Stock Plan.
10.19	CTL Immunotherapies Corp. 2000 Stock Option and Stock Plan.
10.20	2001 Stock Awards Plan.
21.1(b)	Subsidiary of the Registrant.
23.1	Consent of Deloitte & Touche LLP, Independent Registered Accounting Firm.
23.2(a)	Consent of Cooley Godward LLP. Reference is made to Exhibit 5.1.
24.1(b)	Power of Attorney. Reference is made to the signature page.

(a) *To be filed by amendment.*

(b) *Previously filed.*

(c) *Indicates management contract or compensatory plan.*

(d) *Confidential treatment has been requested with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission.*

(b) Financial Statement Schedules.

All schedules are omitted because they are not required, are not applicable or the information is included in the financial statements or notes thereto.

Item 17. Undertakings.

The undersigned Registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Part II

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes that:

- (1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.
- (2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Part II

Signatures

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this Amendment No. 2 to Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Valencia, State of California, on the 2nd day of July, 2004.

MANNKIND CORPORATION

By: /s/ ALFRED E. MANN

Alfred E. Mann
Chief Executive Officer and Chairman

KNOW ALL BY THESE PRESENTS, that each of David MacCallum and Kent Kresa constitutes and appoints Hakan S. Edstrom, Richard L. Anderson and David Thomson, and each of them, as his true and lawful attorneys-in-fact and agents, each with the full power of substitution, for him and in his name, place or stead, in any and all capacities, to sign any and all amendments to this Registration Statement (including post-effective amendments), and to sign any registration statement for the same offering covered by this Registration Statement that is to be effective upon filing pursuant to Rule 462(b) promulgated under the Securities Act, and all post-effective amendments thereto, and to file the same, with exhibits thereto and other documents in connection therewith, 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 and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their, his substitute or substitutes, may lawfully do or cause to be done by virtue hereof. This Power of Attorney may be signed in several counterparts.

Pursuant to the requirements of the Securities Act of 1933, this Amendment No. 2 to Registration Statement has been signed by the following persons 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)	July 2, 2004
/s/ HAKAN S. EDSTROM Hakan S. Edstrom	President, Chief Operating Officer and Director	July 2, 2004
/s/ RICHARD L. ANDERSON Richard L. Anderson	Corporate Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	July 2, 2004
* Kathleen Connell, Ph.D.	Director	July 2, 2004

[Table of Contents](#)

Part II

Signature	Title	Date
* _____ Ronald Consiglio	Director	July 2, 2004
* _____ Llew Keltner M.D., Ph.D.	Director	July 2, 2004
* _____ Michael Friedman, M.D. /s/ KENT KRESA	Director	July 2, 2004
Kent Kresa /s/ DAVID MACCALLUM	Director	July 2, 2004
David MacCallum *By: /s/ HAKAN S. EDSTROM	Director	July 2, 2004
Hakan S. Edstrom <i>Attorney-in-fact</i>		

Part II**Exhibit Index**

Exhibit number	Description of document
1.1(b)	Form of Underwriting Agreement.
3.1(b)	Registrant's Restated Certificate of Incorporation, as currently in effect.
3.2(b)	Registrant's Certificate of Designation, Preferences and Rights of Series A Preferred Stock, as currently in effect.
3.3(b)	Registrant's Certificate of Designation, Preferences and Rights of Series B Preferred Stock, as currently in effect.
3.4(b)	Registrant's Certificate of Designation, Preferences and Rights of Series C Preferred Stock, as currently in effect.
3.5	Form of Registrant's Amended and Restated Certificate of Incorporation, to be effective upon completion of the offering.
3.6(b)	Amended and Restated By-Laws, as currently in effect.
3.7	Form of Registrant's Amended and Restated Bylaws, to be effective upon completion of the offering.
4.1(a)	Form of Common Stock Certificate.
4.2(b)	Registration Rights Agreement made and entered into as of October 15, 1998 by and among CTL ImmunoTherapies Corp., Medical Research Group, LLC, McLean Watson Advisory Inc. and Alfred E. Mann, as amended.
5.1(a)	Opinion of Cooley Godward LLP.
10.1(b)(c)	Form of Indemnity Agreement entered into between the Registrant and its directors and officers.
10.2(b)(c)	2004 Equity Incentive Plan and Form of Stock Option Agreement thereunder.
10.3(c)	2004 Non-Employee Directors' Stock Option Plan and Form of Stock Option Agreement thereunder.
10.4(b)(c)	2004 Employee Stock Purchase Plan and Form of Offering Document thereunder.
10.5(b)(c)	Executive Severance Agreement, dated August 1, 2003, between the Registrant and Wendell Cheatham.
10.6(b)(c)	Executive Severance Agreement, dated August 1, 2003, between the Registrant and Hakan Edstrom.
10.7(b)(c)	Executive Severance Agreement, dated August 1, 2003, between the Registrant and David Thomson.
10.8(b)(c)	Executive Severance Agreement, dated August 1, 2003, between the Registrant and Dick Anderson.
10.9(b)(c)	Executive Severance Agreement, dated August 1, 2003, between the Registrant and Dan Burns.
10.10(b)(c)	Change of Control Agreement, dated August 1, 2003, between the Registrant and Wendell Cheatham.
10.11(b)(c)	Change of Control Agreement, dated August 1, 2003, between the Registrant and Hakan Edstrom.
10.12(b)(c)	Change of Control Agreement, dated August 1, 2003, between the Registrant and David Thomson.
10.13(b)(c)	Change of Control Agreement, dated August 1, 2003, between the Registrant and Dick Anderson.
10.14(b)(c)	Change of Control Agreement, dated August 1, 2003, between the Registrant and Dan Burns
10.15(b)(d)	Supply Agreement made on January 1, 2000 by and between Diosynth B.V. and Pharmaceutical Discovery Corporation.

Table of Contents

Part II

Exhibit number	Description of document
10.16	Pharmaceutical Discovery Corporation 1991 Stock Option Plan.
10.17	Pharmaceutical Discovery Corporation 1999 Stock Plan and Form of Stock Option Plan thereunder.
10.18	AlleCure Corp. 2000 Stock Option and Stock Plan.
10.19	CTL Immunotherapies Corp. 2000 Stock Option and Stock Plan.
10.20	2001 Stock Awards Plan.
21.1(b)	Subsidiary of the Registrant.
23.1	Consent of Deloitte & Touche LLP, Independent Registered Accounting Firm.
23.2(a)	Consent of Cooley Godward LLP. Reference is made to Exhibit 5.1.
24.1(b)	Power of Attorney. Reference is made to the signature page.

(a) *To be filed by amendment.*

(b) *Previously filed.*

(c) *Indicates management contract or compensatory plan.*

(d) *Confidential treatment has been requested with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission.*

AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
MANKIND CORPORATION

The undersigned, Alfred E. Mann, in accordance with the provisions of Sections 242 and 245 of the Delaware General Corporation Law ("DGCL") hereby certifies that:

FIRST: He is the duly elected and acting Chairman of the Board and Chief Executive Officer of MannKind Corporation, a Delaware corporation (the "CORPORATION").

SECOND: The original name of this Corporation was Pharmaceutical Discovery Corporation and the date of filing of the original Certificate of Incorporation of this Corporation with the Secretary of State of the State of Delaware was February 14, 1991.

THIRD: This Amended and Restated Certificate of Incorporation (the "AMENDED AND RESTATED CERTIFICATE") has been duly approved and adopted by the Board of Directors of the Corporation (the "BOARD") in accordance with the applicable provisions of Sections 242 and 245 of the DGCL.

FOURTH: This Amended and Restated Certificate has been duly approved and adopted by the stockholders of the Corporation in accordance with the applicable provisions of Sections 228, 242 and 245 of the DGCL.

FIFTH: The text of the Restated Certificate of Incorporation, as heretofore amended or supplemented, is hereby amended and restated in its entirety to read as follows:

I.

The name of this corporation is MannKind Corporation (the "CORPORATION").

II.

The address of the registered office of the corporation in the State of Delaware is 2711 Centerville Road, Suite 400, City of Wilmington, County of New Castle, 19808 and the name of the registered agent of the Corporation in the State of Delaware at such address is the Corporation Service Company.

III.

The purpose of this Corporation is to engage in any lawful act or activity for which a corporation may be organized under the DGCL.

IV.

A. This Corporation is authorized to issue two classes of stock to be designated, respectively, "COMMON STOCK" and "PREFERRED STOCK." The total number of shares which the

1.

Corporation is authorized to issue is [one hundred million (100,000,000)] shares. [Ninety million (90,000,000)] shares shall be Common Stock, each having a par value of one cent (\$.01). [Ten million (10,000,000)] shares shall be Preferred Stock, each having a par value of one cent (\$.01).

B. The Preferred Stock may be issued from time to time in one or more series. The Board is hereby expressly authorized to provide for the issue of all or any of the remaining shares of the Preferred Stock in one or more series, and to fix the number of shares and to determine or alter for each such series, such voting powers, full or limited, or no voting powers, and such designation, preferences, and relative, participating, optional, or other rights and such qualifications, limitations, or restrictions thereof, as shall be stated and expressed in the resolution or resolutions adopted by the Board providing for the issuance of such shares and as may be permitted by the DGCL. The Board is also expressly authorized to increase or decrease the number of shares of any series subsequent to the issuance of shares of that series, but not below the number of shares of such series then outstanding. In case the number of shares of any series shall be decreased in accordance with the foregoing sentence, the shares constituting such decrease shall resume the status that they had prior to the adoption of the resolution originally fixing the number of shares of such series. The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the Common Stock, without a vote of the holders of the Preferred Stock, or of any series thereof, unless a vote of any such holders is required pursuant to the terms of any certificate of designation filed with respect to any series of Preferred Stock.

C. Each outstanding share of Common Stock shall entitle the holder thereof to one vote on each matter properly submitted to the stockholders of the Corporation for their vote; provided, however, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Certificate of Incorporation (including any certificate of designation filed with respect to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more other such series, to vote thereon by law or pursuant to this Certificate of Incorporation (including any certificate of designation filed with respect to any series of Preferred Stock).

V.

For the management of the business and for the conduct of the affairs of the Corporation, and in further definition, limitation and regulation of the powers of the Corporation, of its directors and of its stockholders or any class thereof, as the case may be, it is further provided that:

A. BOARD OF DIRECTORS

1. The management of the business and the conduct of the affairs of the Corporation shall be vested in the Board. The number of directors which shall constitute the Board shall be fixed exclusively by resolutions adopted by a majority of the authorized number of directors constituting the Board.

2.

2. Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, directors shall be elected at each annual meeting of stockholders for a term of one year. Each director shall serve until his successor is duly elected and qualified or until his death, resignation or removal. No decrease in the number of directors constituting the Board shall shorten the term of any incumbent director.

3. Subject to the rights of the holders of any series of Preferred Stock, any vacancies on the Board resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors, shall, unless the Board determines by resolution that any such vacancies or newly created directorships shall be filled by the stockholders, except as otherwise provided by law, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board, and not by the stockholders. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified.

4. The directors of the Corporation need not be elected by written ballot unless the Bylaws so provide.

B. BYLAW AMENDMENTS. The Board is expressly empowered to adopt, amend or repeal the Bylaws of the Corporation. The stockholders shall also have power to adopt, amend or repeal the Bylaws of the Corporation; provided, however, that, in addition to any vote of the holders of any class or series of stock of the Corporation required by law or by this Certificate of Incorporation, the affirmative vote of the holders of at least sixty-six and two-thirds percent (66 2/3%) of the voting power of all of the then-outstanding shares of the capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required to adopt, amend or repeal any provision of the Bylaws of the Corporation.

C. STOCKHOLDER ACTION. No action shall be taken by the stockholders of the Corporation except at an annual or special meeting of stockholders called in accordance with the Bylaws. No action shall be taken by the stockholders by written consent or electronic transmission.

D. ADVANCE NOTICE. Advance notice of stockholder nominations for the election of directors and of business to be brought by stockholders before any meeting of the stockholders of the Corporation shall be given in the manner provided in the Bylaws of the Corporation.

VI.

A. The liability of the directors for monetary damages shall be eliminated to the fullest extent under applicable law. If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the corporation shall be eliminated to the fullest extent permitted by the DGCL, as so amended.

B. Any repeal or modification of this Article VI shall be prospective and shall not affect the rights under this Article VI in effect at the time of the alleged occurrence of any act or omission to act giving rise to liability or indemnification.

VII.

A. The Corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, except as provided in paragraph B. of this Article VII, and all rights conferred upon the stockholders herein are granted subject to this reservation.

B. Notwithstanding any other provisions of this Certificate of Incorporation or any provision of law which might otherwise permit a lesser vote or no vote, but in addition to any affirmative vote of the holders of any particular class or series of the Corporation required by law or by this Certificate of Incorporation or any certificate of designation filed with respect to a series of Preferred Stock, the affirmative vote of the holders of at least sixty-six and two-thirds percent (66-2/3%) of the voting power of all of the then-outstanding shares of capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required to alter, amend or repeal Articles V, VI, and VII.

IN WITNESS WHEREOF, MANKIND CORPORATION has caused this Amended and Restated Certificate of Incorporation to be signed on this ___ day of _____, 200_ by the undersigned who affirms that the statements made herein are true and correct.

ALFRED E. MANN
Chairman of the Board and Chief
Executive Officer

5.

AMENDED AND RESTATED
BYLAWS
OF
MANKIND CORPORATION
(A DELAWARE CORPORATION)

TABLE OF CONTENTS

	PAGE	
ARTICLE I	OFFICES.....	1
Section 1.	Registered Office.....	1
Section 2.	Other Offices.....	1
ARTICLE II	CORPORATE SEAL.....	1
Section 3.	Corporate Seal.....	1
ARTICLE III	STOCKHOLDERS' MEETINGS.....	1
Section 4.	Place Of Meetings.....	1
Section 5.	Annual Meetings.....	2
Section 6.	Special Meetings.....	4
Section 7.	Notice Of Meetings.....	5
Section 8.	Quorum.....	5
Section 9.	Adjournment And Notice Of Adjourned Meetings.....	6
Section 10.	Voting Rights.....	6
Section 11.	Joint Owners Of Stock.....	6
Section 12.	List Of Stockholders.....	6
Section 13.	Action Without Meeting.....	7
Section 14.	Organization.....	8
ARTICLE IV	DIRECTORS.....	9
Section 15.	Number And Term Of Office.....	9
Section 16.	Powers.....	9
Section 17.	Classes Of Directors.....	9
Section 18.	Vacancies.....	10
Section 19.	Resignation.....	10
Section 20.	Removal.....	11
Section 21.	Meetings.....	11
Section 22.	Quorum And Voting.....	12
Section 23.	Action Without Meeting.....	12
Section 24.	Fees And Compensation.....	12
Section 25.	Committees.....	13
Section 26.	Organization.....	14

TABLE OF CONTENTS
(CONTINUED)

		PAGE
ARTICLE V	OFFICERS.....	14
Section 27.	Officers Designated.....	14
Section 28.	Tenure And Duties Of Officers.....	14
Section 29.	Delegation Of Authority.....	15
Section 30.	Resignations.....	16
Section 31.	Removal.....	16
ARTICLE VI	EXECUTION OF CORPORATE INSTRUMENTS AND VOTING OF SECURITIES OWNED BY THE CORPORATION.....	16
Section 32.	Execution Of Corporate Instruments.....	16
Section 33.	Voting Of Securities Owned By The Corporation.....	16
ARTICLE VII	SHARES OF STOCK.....	17
Section 34.	Form And Execution Of Certificates.....	17
Section 35.	Lost Certificates.....	17
Section 36.	Transfers.....	17
Section 37.	Fixing Record Dates.....	18
Section 38.	Registered Stockholders.....	19
ARTICLE VIII	OTHER SECURITIES OF THE CORPORATION.....	19
Section 39.	Execution Of Other Securities.....	19
ARTICLE IX	Dividends.....	19
Section 40.	Declaration Of Dividends.....	19
Section 41.	Dividend Reserve.....	20
ARTICLE X	Fiscal Year.....	20
Section 42.	Fiscal Year.....	20
ARTICLE XI	Indemnification.....	20
Section 43.	Indemnification Of Directors, Executive Officers, Other Officers, Employees And Other Agents.....	20
ARTICLE XII	Notices.....	23
Section 44.	Notices.....	23
ARTICLE XIII	Amendments.....	24
Section 45.	The Board of Directors is expressly empowered to adopt, amend or repeal the Bylaws of the Corporation.....	24

TABLE OF CONTENTS
(CONTINUED)

	PAGE
ARTICLE XIV	
Section 46.	
LOANS TO OFFICERS.....	25
Loans To Officers.....	25

AMENDED AND RESTATED
BYLAWS
OF
MANKIND CORPORATION
(A DELAWARE CORPORATION)

ARTICLE I
OFFICES

SECTION 1. REGISTERED OFFICE. The registered office of MannKind Corporation (the "CORPORATION") in the State of Delaware shall be in the City of Wilmington, County of New Castle.

SECTION 2. OTHER OFFICES. The Corporation shall also have and maintain an office or principal place of business at such place as may be fixed by the Board of Directors, and may also have offices at such other places, both within and without the State of Delaware as the Board of Directors may from time to time determine or the business of the Corporation may require.

ARTICLE II
CORPORATE SEAL

SECTION 3. CORPORATE SEAL. The Board of Directors may adopt a corporate seal. The corporate seal shall consist of a die bearing the name of the Corporation and the inscription, "Corporate Seal-Delaware." Said seal may be used by causing it or a facsimile thereof to be impressed or affixed or reproduced or otherwise.

ARTICLE III
STOCKHOLDERS' MEETINGS

SECTION 4. PLACE OF MEETINGS. Meetings of the stockholders of the Corporation may be held at such place, either within or without the State of Delaware, as may be determined from time to time by the Board of Directors. The Board of Directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as provided under the Delaware General Corporation Law ("DGCL").

SECTION 5. ANNUAL MEETINGS.

(a) The annual meeting of the stockholders of the Corporation, for the purpose of election of directors and for such other business as may lawfully come before it, shall be held on such date and at such time as may be designated from time to time by the Board of Directors. Nominations of persons for election to the Board of Directors of the Corporation and the proposal of business to be considered by the stockholders may be made at an annual meeting of stockholders: (i) pursuant to the Corporation's notice of meeting of stockholders; (ii) by or at the direction of the Board of Directors; or (iii) by any stockholder of the Corporation who was a stockholder of record at the time of giving the stockholder's notice provided for in the following paragraph, who is entitled to vote at the meeting and who complied with the notice procedures set forth in Section 5.

(b) At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. For nominations or other business to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of Section 5(a) of these Bylaws, (i) the stockholder must have given timely notice thereof in writing to the Secretary of the Corporation, (ii) such other business must be a proper matter for stockholder action under DGCL, (iii) if the stockholder, or the beneficial owner on whose behalf any such proposal or nomination is made, has provided the Corporation with a Solicitation Notice (as defined in clause (iii) of the last sentence of this Section 5(b)), such stockholder or beneficial owner must, in the case of a proposal, have delivered a proxy statement and form of proxy to holders of at least the percentage of the Corporation's voting shares required under applicable law to carry any such proposal, or, in the case of a nomination or nominations, have delivered a proxy statement and form of proxy to holders of a percentage of the Corporation's voting shares reasonably believed by such stockholder or beneficial owner to be sufficient to elect the nominee or nominees proposed to be nominated by such stockholder, and must, in either case, have included in such materials the Solicitation Notice, and (iv) if no Solicitation Notice relating thereto has been timely provided pursuant to this section, the stockholder or beneficial owner proposing such business or nomination must not have solicited a number of proxies sufficient to have required the delivery of such a Solicitation Notice under this Section 5. To be timely, a stockholder's notice shall be delivered to the Secretary at the principal executive offices of the Corporation not later than the close of business on the ninetieth (90th) day nor earlier than the close of business on the one hundred twentieth (120th) day prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that the date of the annual meeting is advanced more than thirty (30) days prior to or delayed by more than thirty (30) days after the anniversary of the preceding year's annual meeting, notice by the stockholder to be timely must be so delivered not earlier than the close of business on the one hundred twentieth (120th) day prior to such annual meeting and not later than the close of business on the later of the ninetieth (90th) day prior to such annual meeting or the tenth (10th) day following the day on which public announcement of the date of such meeting is first made. In no event shall the public announcement of an adjournment of an annual meeting commence a new time period for the giving of a stockholder's notice as described above. Such stockholder's notice shall set forth: (A) as to each person whom the stockholder proposed to nominate for election or reelection as a director all information relating to such person that is required to be disclosed in solicitations of proxies for election of directors in an election contest, or is otherwise

required, in each case pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "1934 ACT") and Rule 14a-4(d) thereunder (including such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected); (B) as to any other business that the stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting and any material interest in such business of such stockholder and the beneficial owner, if any, on whose behalf the proposal is made; and (C) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (i) the name and address of such stockholder, as they appear on the Corporation's books, and of such beneficial owner, (ii) the class and number of shares of the Corporation which are owned beneficially and of record by such stockholder and such beneficial owner, and (iii) whether either such stockholder or beneficial owner intends to deliver a proxy statement and form of proxy to holders of, in the case of the proposal, at least the percentage of the Corporation's voting shares required under applicable law to carry the proposal or, in the case of a nomination or nominations, a sufficient number of holders of the Corporation's voting shares to elect such nominee or nominees (an affirmative statement of such intent, a "SOLICITATION NOTICE").

(c) Notwithstanding anything in the third sentence of Section 5(b) of these Bylaws to the contrary, in the event that the number of directors to be elected to the Board of Directors of the Corporation is increased and there is no public announcement naming all of the nominees for director or specifying the size of the increased Board of Directors made by the Corporation at least one hundred (100) days prior to the first anniversary of the preceding year's annual meeting, a stockholder's notice required by this Section 5 shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be delivered to the Secretary at the principal executive offices of the Corporation not later than the close of business on the tenth (10th) day following the day on which such public announcement is first made by the Corporation.

(d) Only such persons who are nominated in accordance with the procedures set forth in this Section 5 shall be eligible to serve as directors and only such business shall be conducted at a meeting of stockholders as shall have been brought before the meeting in accordance with the procedures set forth in this Section 5. Except as otherwise provided by law, the Chairman of the meeting shall have the power and duty to determine whether a nomination or any business proposed to be brought before the meeting was made, or proposed, as the case may be, in accordance with the procedures set forth in these Bylaws and, if any proposed nomination or business is not in compliance with these Bylaws, to declare that such defective proposal or nomination shall not be presented for stockholder action at the meeting and shall be disregarded.

(e) Notwithstanding the foregoing provisions of this Section 5, in order to include information with respect to a stockholder proposal in the proxy statement and form of proxy for a stockholders' meeting, stockholders must provide notice as required by the regulations promulgated under the 1934 Act. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the Corporation's proxy statement pursuant to Rule 14a-8 under the 1934 Act.

(f) For purposes of this Section 5, "PUBLIC ANNOUNCEMENT" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the 1934 Act.

SECTION 6. SPECIAL MEETINGS.

(a) Special meetings of the stockholders of the Corporation may be called, for any purpose or purposes, by (i) the Chairman of the Board of Directors, (ii) the Chief Executive Officer, or (iii) the Board of Directors pursuant to a resolution adopted by a majority of the total number of authorized directors (whether or not there exist any vacancies in previously authorized directorships at the time any such resolution is presented to the Board of Directors for adoption). At any time or times that the Corporation is subject to Section 2115(b) of the California General Corporation Law ("CGCL"), stockholders holding five percent (5%) or more of the outstanding shares shall have the right to call a special meeting of stockholders only as set forth in Section 18(b) herein.

(b) If a special meeting is properly called by any person or persons other than the Board of Directors, the request shall be in writing, specifying the general nature of the business proposed to be transacted, and shall be delivered personally or sent by certified or registered mail, return receipt requested, to the Chairman of the Board of Directors, the Chief Executive Officer, or the Secretary of the Corporation. No business may be transacted at such special meeting otherwise than specified in such notice. The Board of Directors shall determine the time and place of such special meeting, which shall be held not less than thirty-five (35) nor more than one hundred twenty (120) days after the date of the receipt of the request. Upon determination of the time and place of the meeting, the officer receiving the request shall cause notice to be given to the stockholders entitled to vote, in accordance with the provisions of Section 7 of these Bylaws. Nothing contained in this paragraph (b) shall be construed as limiting, fixing, or affecting the time when a meeting of stockholders called by action of the Board of Directors may be held.

(c) Nominations of persons for election to the Board of Directors may be made at a special meeting of stockholders at which directors are to be elected pursuant to the Corporation's notice of meeting (i) by or at the direction of the Board of Directors or (ii) by any stockholder of the Corporation who is a stockholder of record at the time of giving notice provided for in these Bylaws who shall be entitled to vote at the meeting and who complies with the notice procedures set forth in this Section 6(c). In the event the Corporation calls a special meeting of stockholders for the purpose of electing one or more directors to the Board of Directors, any such stockholder may nominate a person or persons (as the case may be), for election to such position(s) as specified in the Corporation's notice of meeting, if the stockholder's notice required by Section 5(b) of these Bylaws shall be delivered to the Secretary at the principal executive offices of the Corporation not earlier than the close of business on the one hundred twentieth (120th) day prior to such special meeting and not later than the close of business on the later of the ninetieth (90th) day prior to such meeting or the tenth (10th) day following the day on which public announcement is first made of the date of the special meeting and of the nominees proposed by the Board of Directors to be elected at such meeting. In no

event shall the public announcement of an adjournment of a special meeting commence a new time period for the giving of a stockholder's notice as described above.

SECTION 7. NOTICE OF MEETINGS. Except as otherwise provided by law, notice, given in writing or by electronic transmission, of each meeting of stockholders shall be given not less than ten (10) nor more than sixty (60) days before the date of the meeting to each stockholder entitled to vote at such meeting, such notice to specify the place, if any, date and hour, in the case of special meetings, the purpose or purposes of the meeting, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at any such meeting. If mailed, notice is given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the Corporation. Notice of the time, place, if any, and purpose of any meeting of stockholders may be waived in writing, signed by the person entitled to notice thereof, or by electronic transmission by such person, either before or after such meeting, and will be waived by any stockholder by his attendance thereat in person, by remote communication, if applicable, or by proxy, except when the stockholder attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Any stockholder so waiving notice of such meeting shall be bound by the proceedings of any such meeting in all respects as if due notice thereof had been given.

SECTION 8. QUORUM. At all meetings of stockholders, except where otherwise provided by statute or by the Certificate of Incorporation, or by these Bylaws, the presence, in person, by remote communication, if applicable, or by proxy duly authorized, of the holders of a majority of the outstanding shares of stock entitled to vote shall constitute a quorum for the transaction of business. In the absence of a quorum, any meeting of stockholders may be adjourned, from time to time, either by the chairman of the meeting or by vote of the holders of a majority of the shares represented thereat, but no other business shall be transacted at such meeting. The stockholders present at a duly called or convened meeting, at which a quorum is present, may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum. Except as otherwise provided by statute or by applicable stock exchange or Nasdaq rules, or by the Certificate of Incorporation or these Bylaws, in all matters other than the election of directors, the affirmative vote of the majority of shares present in person, by remote communication, if applicable, or represented by proxy at the meeting and entitled to vote generally on the subject matter shall be the act of the stockholders. Except as otherwise provided by statute, the Certificate of Incorporation or these Bylaws, directors shall be elected by a plurality of the votes of the shares present in person, by remote communication, if applicable, or represented by proxy at the meeting and entitled to vote generally on the election of directors. Where a separate vote by a class or classes or series is required, except where otherwise provided by the statute or by the Certificate of Incorporation or these Bylaws, a majority of the outstanding shares of such class or classes or series, present in person, by remote communication, if applicable, or represented by proxy duly authorized, shall constitute a quorum entitled to take action with respect to that vote on that matter. Except where otherwise provided by statute or by the Certificate of Incorporation or these Bylaws, the affirmative vote of the majority (plurality, in the case of the election of directors) of shares of

such class or classes or series present in person, by remote communication, if applicable, or represented by proxy at the meeting shall be the act of such class or classes or series.

SECTION 9. ADJOURNMENT AND NOTICE OF ADJOURNED MEETINGS. Any meeting of stockholders, whether annual or special, may be adjourned from time to time either by the chairman of the meeting or by the vote of a majority of the shares present in person, by remote communication, if applicable, or represented by proxy at the meeting. When a meeting is adjourned to another time or place, if any, notice need not be given of the adjourned meeting if the time and place, if any, thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the Corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than thirty (30) days or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

SECTION 10. VOTING RIGHTS. For the purpose of determining those stockholders entitled to vote at any meeting of the stockholders, except as otherwise provided by law, only persons in whose names shares stand on the stock records of the Corporation on the record date, as provided in Section 12 of these Bylaws, shall be entitled to vote at any meeting of stockholders. Every person entitled to vote or execute consents shall have the right to do so either in person, by remote communication, if applicable, or by an agent or agents authorized by a proxy granted in accordance with Delaware law. An agent so appointed need not be a stockholder. No proxy shall be voted after three (3) years from its date of creation unless the proxy provides for a longer period.

SECTION 11. JOINT OWNERS OF STOCK. If shares or other securities having voting power stand of record in the names of two (2) or more persons, whether fiduciaries, members of a partnership, joint tenants, tenants in common, tenants by the entirety, or otherwise, or if two (2) or more persons have the same fiduciary relationship respecting the same shares, unless the Secretary is given written notice to the contrary and is furnished with a copy of the instrument or order appointing them or creating the relationship wherein it is so provided, their acts with respect to voting shall have the following effect: (a) if only one (1) votes, his act binds all; (b) if more than one (1) votes, the act of the majority so voting binds all; (c) if more than one (1) votes, but the vote is evenly split on any particular matter, each faction may vote the securities in question proportionally, or may apply to the Delaware Court of Chancery for relief as provided in the DGCL, Section 217(b). If the instrument filed with the Secretary shows that any such tenancy is held in unequal interests, a majority or even-split for the purpose of subsection (c) shall be a majority or even-split in interest.

SECTION 12. LIST OF STOCKHOLDERS. The Secretary shall prepare and make, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at said meeting, arranged in alphabetical order, showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, (a) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (b) during ordinary business hours, at the principal place of business of the Corporation. In the event that the Corporation determines to make the

list available on an electronic network, the Corporation may take reasonable steps to ensure that such information is available only to stockholders of the Corporation. The list shall be open to examination of any stockholder during the time of the meeting as provided by law.

SECTION 13. ACTION WITHOUT MEETING.

(a) Unless otherwise provided in the Certificate of Incorporation, any action required by statute to be taken at any annual or special meeting of the stockholders, or any action which may be taken at any annual or special meeting of the stockholders, may be taken without a meeting, without prior notice and without a vote, if a consent in writing, or by electronic transmission setting forth the action so taken, shall be signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted.

(b) Every written consent or electronic transmission shall bear the date of signature of each stockholder who signs the consent, and no written consent or electronic transmission shall be effective to take the corporate action referred to therein unless, within sixty (60) days of the earliest dated consent delivered to the Corporation in the manner herein required, written consents or electronic transmissions signed by a sufficient number of stockholders to take action are delivered to the Corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the Corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to the Corporation's registered office shall be by hand or by certified or registered mail, return receipt requested.

(c) Prompt notice of the taking of the corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing or by electronic transmission and who, if the action had been taken at a meeting, would have been entitled to notice of the meeting if the record date for such meeting had been the date that written consents signed by a sufficient number of stockholders to take action were delivered to the Corporation as provided in Section 228(c) of the DGCL. If the action which is consented to is such as would have required the filing of a certificate under any section of the DGCL if such action had been voted on by stockholders at a meeting thereof, then the certificate filed under such section shall state, in lieu of any statement required by such section concerning any vote of stockholders, that written consent has been given in accordance with Section 228 of the DGCL.

(d) A telegram, cablegram or other electronic transmission consent to an action to be taken and transmitted by a stockholder or proxyholder, or by a person or persons authorized to act for a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes of this section, provided that any such telegram, cablegram or other electronic transmission sets forth or is delivered with information from which the Corporation can determine (i) that the telegram, cablegram or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder or proxyholder and (ii) the date on which such stockholder or proxyholder or authorized person or persons transmitted such telegram, cablegram or electronic transmission. The date on which such telegram, cablegram or electronic transmission is transmitted shall be deemed to be the date

on which such consent was signed. No consent given by telegram, cablegram or other electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form shall be delivered to the Corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the Corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to the Corporation's registered office shall be made by hand or by certified or registered mail, return receipt requested. Notwithstanding the foregoing limitations on delivery, consents given by telegram, cablegram or other electronic transmission may be otherwise delivered to the principal place of business of the Corporation or to an officer or agent of the Corporation having custody of the book in which proceedings of meetings of stockholders are recorded if, to the extent and in the manner provided by resolution of the board of directors of the Corporation. Any copy, facsimile or other reliable reproduction of a consent in writing may be substituted or used in lieu of the original writing for any and all purposes for which the original writing could be used, provided that such copy, facsimile or other reproduction shall be a complete reproduction of the entire original in writing.

(e) Notwithstanding the foregoing, no such action by written consent or by electronic transmission may be taken following the closing of the initial public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended (the "1933 ACT"), covering the offer and sale of Common Stock of the Corporation to the public (the "INITIAL PUBLIC OFFERING").

SECTION 14. ORGANIZATION.

(a) At every meeting of stockholders, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the President, or, if the President is absent, a chairman of the meeting chosen by a majority in interest of the stockholders entitled to vote, present in person or by proxy, shall act as chairman. The Secretary, or, in his absence, an Assistant Secretary directed to do so by the President, shall act as secretary of the meeting.

(b) The Board of Directors of the Corporation shall be entitled to make such rules or regulations for the conduct of meetings of stockholders as it shall deem necessary, appropriate or convenient. Subject to such rules and regulations of the Board of Directors, if any, the chairman of the meeting shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are necessary, appropriate or convenient for the proper conduct of the meeting, including, without limitation, establishing an agenda or order of business for the meeting, rules and procedures for maintaining order at the meeting and the safety of those present, limitations on participation in such meeting to stockholders of record of the Corporation and their duly authorized and constituted proxies and such other persons as the chairman shall permit, restrictions on entry to the meeting after the time fixed for the commencement thereof, limitations on the time allotted to questions or comments by participants and regulation of the opening and closing of the polls for balloting on matters which are to be voted on by ballot. The date and time of the opening and closing of the polls for each matter upon which the stockholders will vote at the meeting shall be announced at the meeting. Unless and to the extent determined by the Board of Directors or the

chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with rules of parliamentary procedure.

ARTICLE IV

DIRECTORS

SECTION 15. NUMBER AND TERM OF OFFICE. The authorized number of directors of the Corporation shall be fixed in accordance with the Certificate of Incorporation. Directors need not be stockholders unless so required by the Certificate of Incorporation. If for any cause, the directors shall not have been elected at an annual meeting, they may be elected as soon thereafter as convenient at a special meeting of the stockholders called for that purpose in the manner provided in these Bylaws.

SECTION 16. POWERS. The powers of the Corporation shall be exercised, its business conducted and its property controlled by the Board of Directors, except as may be otherwise provided by statute or by the Certificate of Incorporation.

SECTION 17. ELECTION.

(a) Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, directors shall be elected at each annual meeting of stockholders for a term of one year.

(b) No stockholder entitled to vote at an election for directors may cumulate votes to which such stockholder is entitled, unless, at the time of the election, the Corporation is subject to Section 2115(b) of the CGCL. During such time or times that the Corporation is subject to Section 2115(b) of the CGCL, every stockholder entitled to vote at an election for directors may cumulate such stockholder's votes and give one candidate a number of votes equal to the number of directors to be elected multiplied by the number of votes to which such stockholder's shares are otherwise entitled, or distribute the stockholder's votes on the same principle among as many candidates as such stockholder thinks fit. No stockholder, however, shall be entitled to so cumulate such stockholder's votes unless (i) the names of such candidate or candidates have been placed in nomination prior to the voting and (ii) the stockholder has given notice at the meeting, prior to the voting, of such stockholder's intention to cumulate such stockholder's votes. If any stockholder has given proper notice to cumulate votes, all stockholders may cumulate their votes for any candidates who have been properly placed in nomination. Under cumulative voting, the candidates receiving the highest number of votes, up to the number of directors to be elected, are elected.

(c) Notwithstanding the foregoing provisions of this section, each director shall serve until his successor is duly elected and qualified or until his earlier death, resignation or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

SECTION 18. VACANCIES.

(a) Unless otherwise provided in the Certificate of Incorporation and subject to the rights of the holders of any series of Preferred Stock, any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board of Directors. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified. A vacancy in the Board of Directors shall be deemed to exist under this Section 18 in the case of the death, removal or resignation of any director.

(b) At any time or times that the Corporation is subject to Section 2115(b) of the CGCL, if, after the filling of any vacancy, the directors then in office who have been elected by stockholders shall constitute less than a majority of the directors then in office, then

(1) Any holder or holders of an aggregate of five percent (5%) or more of the total number of shares at the time outstanding having the right to vote for those directors may call a special meeting of stockholders; or

(2) The Superior Court of the proper county shall, upon application of such stockholder or stockholders, summarily order a special meeting of stockholders, to be held to elect the entire board, all in accordance with Section 305(c) of the CGCL. The term of office of any director shall terminate upon that election of a successor.

SECTION 19. RESIGNATION. Any director may resign at any time by delivering his or her notice in writing or by electronic transmission to the Secretary, such resignation to specify whether it will be effective at a particular time, upon receipt by the Secretary or at the pleasure of the Board of Directors. If no such specification is made, it shall be deemed effective at the pleasure of the Board of Directors. When one or more directors shall resign from the Board of Directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each Director so chosen shall hold office for the unexpired portion of the term of the Director whose place shall be vacated and until his successor shall have been duly elected and qualified.

SECTION 20. REMOVAL.

(a) During such time or times that the Corporation is subject to Section 2115(b) of the CGCL, the Board of Directors or any individual director may be removed from office at any time without cause by the affirmative vote of the holders of at least a majority of the outstanding shares entitled to vote on such removal; provided, however, that unless the entire Board is removed, no individual director may be removed when the votes cast against such director's removal, or not consenting in writing to such removal, would be sufficient to elect that

director if voted cumulatively at an election which the same total number of votes were cast (or, if such action is taken by written consent, all shares entitled to vote were voted) and the entire number of directors authorized at the time of such director's most recent election were then being elected.

(b) At any time or times that the Corporation is not subject to Section 2115(b) of the CGCL, and subject to any limitations imposed by law, Section 20(a) above shall no longer apply and removal shall be as provided in Section 141(k) of the DGCL.

SECTION 21. MEETINGS.

(a) REGULAR MEETINGS. Unless otherwise restricted by the Certificate of Incorporation, regular meetings of the Board of Directors may be held at any time or date and at any place within or without the State of Delaware which has been designated by the Board of Directors and publicized among all directors, either orally or in writing, by telephone, including a voice-messaging system or other system designed to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means. No further notice shall be required for regular meetings of the Board of Directors.

(b) SPECIAL MEETINGS. Unless otherwise restricted by the Certificate of Incorporation, special meetings of the Board of Directors may be held at any time and place within or without the State of Delaware whenever called by the Chairman of the Board, the President or a majority of the authorized number of directors.

(c) MEETINGS BY ELECTRONIC COMMUNICATIONS EQUIPMENT. Any member of the Board of Directors, or of any committee thereof, may participate in a meeting by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting by such means shall constitute presence in person at such meeting.

(d) NOTICE OF SPECIAL MEETINGS. Notice of the time and place of all special meetings of the Board of Directors shall be orally or in writing, by telephone, including a voice messaging system or other system or technology designed to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means, during normal business hours, at least twenty-four (24) hours before the date and time of the meeting. If notice is sent by U.S. mail, it shall be sent by first class mail, charges prepaid, at least three (3) days before the date of the meeting. Notice of any meeting may be waived in writing, or by electronic transmission, at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends the meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

(e) WAIVER OF NOTICE. The transaction of all business at any meeting of the Board of Directors, or any committee thereof, however called or noticed, or wherever held, shall be as valid as though had at a meeting duly held after regular call and notice, if a quorum be present and if, either before or after the meeting, each of the directors not present who did not receive notice shall sign a written waiver of notice or shall waive notice by electronic

transmission. All such waivers shall be filed with the corporate records or made a part of the minutes of the meeting.

SECTION 22. QUORUM AND VOTING.

(a) Unless the Certificate of Incorporation requires a greater number, a quorum of the Board of Directors shall consist of a majority of the exact number of directors fixed from time to time by the Board of Directors in accordance with the Certificate of Incorporation; provided, however, at any meeting whether a quorum be present or otherwise, a majority of the directors present may adjourn from time to time until the time fixed for the next regular meeting of the Board of Directors, without notice other than by announcement at the meeting.

(b) At each meeting of the Board of Directors at which a quorum is present, all questions and business shall be determined by the affirmative vote of a majority of the directors present, unless a different vote be required by law, the Certificate of Incorporation or these Bylaws.

SECTION 23. ACTION WITHOUT MEETING. Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent thereto in writing or by electronic transmission, and such writing or writings or transmission or transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

SECTION 24. FEES AND COMPENSATION. Directors shall be entitled to such compensation for their services as may be approved by the Board of Directors, including, if so approved, by resolution of the Board of Directors, a fixed sum and expenses of attendance, if any, for attendance at each regular or special meeting of the Board of Directors and at any meeting of a committee of the Board of Directors. Nothing herein contained shall be construed to preclude any director from serving the Corporation in any other capacity as an officer, agent, employee, or otherwise and receiving compensation therefor.

SECTION 25. COMMITTEES.

(a) EXECUTIVE COMMITTEE. The Board of Directors may appoint an Executive Committee to consist of one (1) or more members of the Board of Directors. The Executive Committee, to the extent permitted by law and provided in the resolution of the Board of Directors shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the Corporation, and may authorize the seal of the Corporation to be affixed to all papers which may require it; but no such committee shall have the power or authority in reference to (i) approving or adopting, or recommending to the stockholders, any action or matter expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopting, amending or repealing any bylaw of the Corporation.

(b) OTHER COMMITTEES. The Board of Directors may, from time to time, appoint such other committees as may be permitted by law. Such other committees appointed by the Board of Directors shall consist of one (1) or more members of the Board of Directors and shall have such powers and perform such duties as may be prescribed by the resolution or resolutions creating such committees, but in no event shall any such committee have the powers denied to the Executive Committee in these Bylaws.

(c) TERM. The Board of Directors, subject to any requirements of any outstanding series of Preferred Stock and the provisions of subsections (a) or (b) of this Bylaw, may at any time increase or decrease the number of members of a committee or terminate the existence of a committee. The membership of a committee member shall terminate on the date of his death or voluntary resignation from the committee or from the Board of Directors. The Board of Directors may at any time for any reason remove any individual committee member and the Board of Directors may fill any committee vacancy created by death, resignation, removal or increase in the number of members of the committee. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee, and, in addition, in the absence or disqualification of any member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member.

(d) MEETINGS. Unless the Board of Directors shall otherwise provide, regular meetings of the Executive Committee or any other committee appointed pursuant to this Section 25 shall be held at such times and places as are determined by the Board of Directors, or by any such committee, and when notice thereof has been given to each member of such committee, no further notice of such regular meetings need be given thereafter. Special meetings of any such committee may be held at any place which has been determined from time to time by such committee, and may be called by any director who is a member of such committee, upon notice to the members of such committee of the time and place of such special meeting given in the manner provided for the giving of notice to members of the Board of Directors of the time and place of special meetings of the Board of Directors. Notice of any special meeting of any committee may be waived in writing at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends such special meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Unless otherwise provided by the Board of Directors in the resolutions authorizing the creation of the committee, a majority of the authorized number of members of any such committee shall constitute a quorum for the transaction of business, and the act of a majority of those present at any meeting at which a quorum is present shall be the act of such committee.

SECTION 26. ORGANIZATION. At every meeting of the directors, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the President (if a director), or if the President is absent, the most senior Vice President (if a director), or, in the absence of any such person, a chairman of the meeting chosen by a majority of the directors

present, shall preside over the meeting. The Secretary, or in his absence, any Assistant Secretary directed to do so by the President, shall act as secretary of the meeting.

ARTICLE V

OFFICERS

SECTION 27. OFFICERS DESIGNATED. The officers of the Corporation shall include, if and when designated by the Board of Directors, the Chairman of the Board of Directors, the Chief Executive Officer, the President, one or more Vice Presidents, the Secretary, the Chief Financial Officer, the Treasurer and the Controller, all of whom shall be elected at the annual organizational meeting of the Board of Directors. The Board of Directors may also appoint one or more Assistant Secretaries, Assistant Treasurers, Assistant Controllers and such other officers and agents with such powers and duties as it shall deem necessary. The Board of Directors may assign such additional titles to one or more of the officers as it shall deem appropriate. Any one person may hold any number of offices of the Corporation at any one time unless specifically prohibited therefrom by law. The salaries and other compensation of the officers of the Corporation shall be fixed by or in the manner designated by the Board of Directors.

SECTION 28. TENURE AND DUTIES OF OFFICERS.

(a) GENERAL. All officers shall hold office at the pleasure of the Board of Directors and until their successors shall have been duly elected and qualified, unless sooner removed. Any officer elected or appointed by the Board of Directors may be removed at any time by the Board of Directors. If the office of any officer becomes vacant for any reason, the vacancy may be filled by the Board of Directors.

(b) DUTIES OF CHAIRMAN OF THE BOARD OF DIRECTORS. The Chairman of the Board of Directors, when present, shall preside at all meetings of the stockholders and the Board of Directors. The Chairman of the Board of Directors shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time. If there is no Chief Executive Officer or President, then the Chairman of the Board of Directors shall also serve as the Chief Executive Officer of the Corporation and shall have the powers and duties prescribed in paragraph (d) of this Section 28.

(c) DUTIES OF THE LEAD DIRECTOR. In the event the Chairman of the Board of Directors is an employee of the Corporation, then the non-employee members of the Board of Directors, in their sole discretion, may appoint a Lead Director to perform such duties commonly incident to the office of the Chairman of the Board of Directors and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

(d) DUTIES OF CHIEF EXECUTIVE OFFICER. The Chief Executive Officer shall preside at all meetings of the stockholders and at all meetings of the Board of Directors, unless the Chairman of the Board of Directors has been appointed and is present. The Chief Executive Officer shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the Corporation and shall be responsible for overall

strategic planning and the development of strategic relationships, for corporate financing, for providing management oversight of the President. The Chief Executive Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

(e) DUTIES OF PRESIDENT. Subject to the supervisory powers of the Chief Executive Officer, the President shall be responsible for the day-to-day management of the Corporation, and for providing support to the Chief Executive Officer in the execution of his or her duties. In the absence or disability of the Chief Executive Officer, the President, if any, shall also perform all the duties of the Chief Executive Officer, and when so acting shall have all the powers of, and be subject to all the restrictions upon, the Chief Executive Officer. The President shall have the general powers and duties of management usually vested in the president of a corporation with a chief executive officer, and shall have such other powers and perform such other duties as from time to time may be prescribed by the Board of Directors, these bylaws, the Chief Executive Officer or the Chairman of the Board.

(f) DUTIES OF VICE PRESIDENTS. The Vice Presidents may assume and perform the duties of the President in the absence or disability of the President or whenever the office of President is vacant. The Vice Presidents shall perform other duties commonly incident to their office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

(g) DUTIES OF SECRETARY. The Secretary shall attend all meetings of the stockholders and of the Board of Directors and shall record all acts and proceedings thereof in the minute book of the Corporation. The Secretary shall give notice in conformity with these Bylaws of all meetings of the stockholders and of all meetings of the Board of Directors and any committee thereof requiring notice. The Secretary shall perform all other duties provided for in these Bylaws and other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time. The President may direct any Assistant Secretary to assume and perform the duties of the Secretary in the absence or disability of the Secretary, and each Assistant Secretary shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

(h) DUTIES OF CHIEF FINANCIAL OFFICER. The Chief Financial Officer shall keep or cause to be kept the books of account of the Corporation in a thorough and proper manner and shall render statements of the financial affairs of the Corporation in such form and as often as required by the Board of Directors or the President. The Chief Financial Officer, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the Corporation. The Chief Financial Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time. The President may direct the Treasurer or any Assistant Treasurer, or the Controller or any Assistant Controller, to assume and perform the duties of the Chief Financial Officer in the absence or disability of the Chief Financial Officer, and each Treasurer and Assistant Treasurer and each Controller and Assistant

Controller shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

SECTION 29. DELEGATION OF AUTHORITY. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

SECTION 30. RESIGNATIONS. Any officer may resign at any time by giving notice in writing or by electronic transmission to the Board of Directors or to the President or to the Secretary. Any such resignation shall be effective when received by the person or persons to whom such notice is given, unless a later time is specified therein, in which event the resignation shall become effective at such later time. Unless otherwise specified in such notice, the acceptance of any such resignation shall not be necessary to make it effective. Any resignation shall be without prejudice to the rights, if any, of the Corporation under any contract with the resigning officer.

SECTION 31. REMOVAL. Any officer may be removed from office at any time, either with or without cause, by the affirmative vote of a majority of the directors in office at the time, or by the unanimous written consent of the directors in office at the time, or by any committee or superior officers upon whom such power of removal may have been conferred by the Board of Directors.

ARTICLE VI

EXECUTION OF CORPORATE INSTRUMENTS AND VOTING OF SECURITIES OWNED BY THE CORPORATION

SECTION 32. EXECUTION OF CORPORATE INSTRUMENTS. The Board of Directors may, in its discretion, determine the method and designate the signatory officer or officers, or other person or persons, to execute on behalf of the Corporation any corporate instrument or document, or to sign on behalf of the Corporation the corporate name without limitation, or to enter into contracts on behalf of the Corporation, except where otherwise provided by law or these Bylaws, and such execution or signature shall be binding upon the Corporation.

All checks and drafts drawn on banks or other depositaries on funds to the credit of the Corporation or in special accounts of the Corporation shall be signed by such person or persons as the Board of Directors shall authorize so to do.

Unless authorized or ratified by the Board of Directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the Corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

SECTION 33. VOTING OF SECURITIES OWNED BY THE CORPORATION. All stock and other securities of other corporations owned or held by the Corporation for itself, or for other parties in any capacity, shall be voted, and all proxies with respect thereto shall be executed, by the person

authorized so to do by resolution of the Board of Directors, or, in the absence of such authorization, by the Chairman of the Board of Directors, the Chief Executive Officer, the President, or any Vice President.

ARTICLE VII

SHARES OF STOCK

SECTION 34. FORM AND EXECUTION OF CERTIFICATES. Certificates for the shares of stock of the Corporation shall be in such form as is consistent with the Certificate of Incorporation and applicable law. Every holder of stock in the Corporation shall be entitled to have a certificate signed by or in the name of the Corporation by the Chairman of the Board of Directors, or the President or any Vice President and by the Treasurer or Assistant Treasurer or the Secretary or Assistant Secretary, certifying the number of shares owned by him in the Corporation. Any or all of the signatures on the certificate may be facsimiles. In case any officer, transfer agent, or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued with the same effect as if he were such officer, transfer agent, or registrar at the date of issue. Each certificate shall state upon the face or back thereof, in full or in summary, all of the powers, designations, preferences, and rights, and the limitations or restrictions of the shares authorized to be issued or shall, except as otherwise required by law, set forth on the face or back a statement that the Corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional, or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Within a reasonable time after the issuance or transfer of uncertificated stock, the Corporation shall send to the registered owner thereof a written notice containing the information required to be set forth or stated on certificates pursuant to this section or otherwise required by law or with respect to this section a statement that the Corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

SECTION 35. LOST CERTIFICATES. A new certificate or certificates shall be issued in place of any certificate or certificates theretofore issued by the Corporation alleged to have been lost, stolen, or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen, or destroyed. The Corporation may require, as a condition precedent to the issuance of a new certificate or certificates, the owner of such lost, stolen, or destroyed certificate or certificates, or the owner's legal representative, to agree to indemnify the Corporation in such manner as it shall require or to give the Corporation a surety bond in such form and amount as it may direct as indemnity against any claim that may be made against the Corporation with respect to the certificate alleged to have been lost, stolen, or destroyed.

SECTION 36. TRANSFERS.

(a) Transfers of record of shares of stock of the Corporation shall be made only upon its books by the holders thereof, in person or by attorney duly authorized, and upon the surrender of a properly endorsed certificate or certificates for a like number of shares.

(b) The Corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the Corporation to restrict the transfer of shares of stock of the Corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

SECTION 37. FIXING RECORD DATES.

(a) In order that the Corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall, subject to applicable law, not be more than sixty (60) nor less than ten (10) days before the date of such meeting. If no record date is fixed by the Board of Directors, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.

(b) Prior to the Initial Public Offering, in order that the Corporation may determine the stockholders entitled to consent to corporate action in writing without a meeting, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which date shall not be more than ten (10) days after the date upon which the resolution fixing the record date is adopted by the Board of Directors. Any stockholder of record seeking to have the stockholders authorize or take corporate action by written consent shall, by written notice to the Secretary, request the Board of Directors to fix a record date. The Board of Directors shall promptly, but in all events within ten (10) days after the date on which such a request is received, adopt a resolution fixing the record date. If no record date has been fixed by the Board of Directors within ten (10) days of the date on which such a request is received, the record date for determining stockholders entitled to consent to corporate action in writing without a meeting, when no prior action by the Board of Directors is required by applicable law, shall be the first date on which a signed written consent setting forth the action taken or proposed to be taken is delivered to the Corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the Corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to the Corporation's registered office shall be by hand or by certified or registered mail, return receipt requested. If no record date has been fixed by the Board of Directors and prior action by the Board of Directors is required by law, the record date for determining stockholders entitled to

consent to corporate action in writing without a meeting shall be at the close of business on the day on which the Board of Directors adopts the resolution taking such prior action.

(c) In order that the Corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than sixty (60) days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

SECTION 38. REGISTERED STOCKHOLDERS. The Corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, and to vote as such owner, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VIII

OTHER SECURITIES OF THE CORPORATION

SECTION 39. EXECUTION OF OTHER SECURITIES. All bonds, debentures and other corporate securities of the Corporation, other than stock certificates (covered in Section 34), may be signed by the Chairman of the Board of Directors, the President or any Vice President, or such other person as may be authorized by the Board of Directors, and the corporate seal impressed thereon or a facsimile of such seal imprinted thereon and attested by the signature of the Secretary or an Assistant Secretary, or the Chief Financial Officer or Treasurer or an Assistant Treasurer; provided, however, that where any such bond, debenture or other corporate security shall be authenticated by the manual signature, or where permissible facsimile signature, of a trustee under an indenture pursuant to which such bond, debenture or other corporate security shall be issued, the signatures of the persons signing and attesting the corporate seal on such bond, debenture or other corporate security may be the imprinted facsimile of the signatures of such persons. Interest coupons appertaining to any such bond, debenture or other corporate security, authenticated by a trustee as aforesaid, shall be signed by the Treasurer or an Assistant Treasurer of the Corporation or such other person as may be authorized by the Board of Directors, or bear imprinted thereon the facsimile signature of such person. In case any officer who shall have signed or attested any bond, debenture or other corporate security, or whose facsimile signature shall appear thereon or on any such interest coupon, shall have ceased to be such officer before the bond, debenture or other corporate security so signed or attested shall have been delivered, such bond, debenture or other corporate security nevertheless may be adopted by the Corporation and issued and delivered as though the person who signed the same or whose facsimile signature shall have been used thereon had not ceased to be such officer of the Corporation.

ARTICLE IX

DIVIDENDS

SECTION 40. DECLARATION OF DIVIDENDS. Dividends upon the capital stock of the Corporation, subject to the provisions of the Certificate of Incorporation and applicable law, if any, may be declared by the Board of Directors pursuant to law at any regular or special meeting. Dividends may be paid in cash, in property, or in shares of the capital stock, subject to the provisions of the Certificate of Incorporation and applicable law.

SECTION 41. DIVIDEND RESERVE. Before payment of any dividend, there may be set aside out of any funds of the Corporation available for dividends such sum or sums as the Board of Directors from time to time, in their absolute discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the Corporation, or for such other purpose as the Board of Directors shall think conducive to the interests of the Corporation, and the Board of Directors may modify or abolish any such reserve in the manner in which it was created.

ARTICLE X

FISCAL YEAR

SECTION 42. FISCAL YEAR. The fiscal year of the Corporation shall be fixed by resolution of the Board of Directors.

ARTICLE XI

INDEMNIFICATION

SECTION 43. INDEMNIFICATION OF DIRECTORS, EXECUTIVE OFFICERS, OTHER OFFICERS, EMPLOYEES AND OTHER AGENTS.

(a) DIRECTORS AND EXECUTIVE OFFICERS. The Corporation shall indemnify its directors and executive officers (for the purposes of this Article XI, "EXECUTIVE OFFICERS" shall have the meaning defined in Rule 3b-7 promulgated under the 1934 Act) to the fullest extent not prohibited by the DGCL or any other applicable law; provided, however, that the Corporation may modify the extent of such indemnification by individual contracts with its directors and executive officers; and, provided, further, that the Corporation shall not be required to indemnify any director or executive officer in connection with any proceeding (or part thereof) initiated by such person unless (i) such indemnification is expressly required to be made by law, (ii) the proceeding was authorized by the Board of Directors of the Corporation, (iii) such indemnification is provided by the Corporation, in its sole discretion, pursuant to the powers vested in the Corporation under the DGCL or any other applicable law or (iv) such indemnification is required to be made under subsection (d).

(b) OTHER OFFICERS, EMPLOYEES AND OTHER AGENTS. The Corporation shall have power to indemnify its other officers, employees and other agents as set forth in the DGCL

or any other applicable law. The Board of Directors shall have the power to delegate the determination of whether indemnification shall be given to any such person to such officers or other persons as the Board of Directors shall determine.

(c) EXPENSES. The Corporation shall advance to any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director or executive officer, of the Corporation, or is or was serving at the request of the Corporation as a director or executive officer of another corporation, partnership, joint venture, trust or other enterprise, prior to the final disposition of the proceeding, promptly following request therefor, all expenses incurred by any director or executive officer in connection with such proceeding provided, however, that if the DGCL requires, an advancement of expenses incurred by a director or executive officer in his or her capacity as a director or executive officer (and not in any other capacity in which service was or is rendered by such indemnitee, including, without limitation, service to an employee benefit plan) shall be made only upon delivery to the Corporation of an undertaking (hereinafter an "UNDERTAKING"), by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal (hereinafter a "FINAL ADJUDICATION") that such indemnitee is not entitled to be indemnified for such expenses under this Section 43 or otherwise.

Notwithstanding the foregoing, unless otherwise determined pursuant to paragraph (e) of this Section 43, no advance shall be made by the Corporation to an executive officer of the Corporation (except by reason of the fact that such executive officer is or was a director of the Corporation in which event this paragraph shall not apply) in any action, suit or proceeding, whether civil, criminal, administrative or investigative, if a determination is reasonably and promptly made (i) by a majority vote of directors who were not parties to the proceeding, even if not a quorum, or (ii) by a committee of such directors designated by a majority vote of such directors, even though less than a quorum, or (iii) if there are no such directors, or such directors so direct, by independent legal counsel in a written opinion, that the facts known to the decision-making party at the time such determination is made demonstrate clearly and convincingly that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the Corporation.

(d) ENFORCEMENT. Without the necessity of entering into an express contract, all rights to indemnification and advances to directors and executive officers under this Bylaw shall be deemed to be contractual rights and be effective to the same extent and as if provided for in a contract between the Corporation and the director or executive officer. Any right to indemnification or advances granted by this Section 43 to a director or executive officer shall be enforceable by or on behalf of the person holding such right in any court of competent jurisdiction if (i) the claim for indemnification or advances is denied, in whole or in part, or (ii) no disposition of such claim is made within ninety (90) days of request therefor. The claimant in such enforcement action, if successful in whole or in part, shall be entitled to be paid also the expense of prosecuting the claim. In connection with any claim for indemnification, the Corporation shall be entitled to raise as a defense to any such action that the claimant has not met the standards of conduct that make it permissible under the DGCL or any other applicable law

for the Corporation to indemnify the claimant for the amount claimed. In connection with any claim by an executive officer of the Corporation (except in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such executive officer is or was a director of the Corporation) for advances, the Corporation shall be entitled to raise a defense as to any such action clear and convincing evidence that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the Corporation, or with respect to any criminal action or proceeding that such person acted without reasonable cause to believe that his conduct was lawful. Neither the failure of the Corporation (including its Board of Directors, independent legal counsel or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because he has met the applicable standard of conduct set forth in the DGCL or any other applicable law, nor an actual determination by the Corporation (including its Board of Directors, independent legal counsel or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that claimant has not met the applicable standard of conduct.

(e) NON-EXCLUSIVITY OF RIGHTS. The rights conferred on any person by this Bylaw shall not be exclusive of any other right which such person may have or hereafter acquire under any applicable statute, provision of the Certificate of Incorporation, Bylaws, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his official capacity and as to action in another capacity while holding office. The Corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advances, to the fullest extent not prohibited by the DGCL, or by any other applicable law.

(f) SURVIVAL OF RIGHTS. The rights conferred on any person by this Bylaw shall continue as to a person who has ceased to be a director or executive officer and shall inure to the benefit of the heirs, executors and administrators of such a person.

(g) INSURANCE. To the fullest extent permitted by the DGCL or any other applicable law, the Corporation, upon approval by the Board of Directors, may purchase insurance on behalf of any person required or permitted to be indemnified pursuant to this Section 43.

(h) AMENDMENTS. Any repeal or modification of this Section 43 shall only be prospective and shall not affect the rights under this Bylaw in effect at the time of the alleged occurrence of any action or omission to act that is the cause of any proceeding against any agent of the Corporation.

(i) SAVING CLAUSE. If this Bylaw or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Corporation shall nevertheless indemnify each director and executive officer to the full extent not prohibited by any applicable portion of this Section 43 that shall not have been invalidated, or by any other applicable law. If this Section 43 shall be invalid due to the application of the indemnification provisions of another jurisdiction, then the Corporation shall indemnify each director and executive officer to the full extent under any other applicable law.

(j) CERTAIN DEFINITIONS. For the purposes of this Bylaw, the following definitions shall apply:

(1) The term "PROCEEDING" shall be broadly construed and shall include, without limitation, the investigation, preparation, prosecution, defense, settlement, arbitration and appeal of, and the giving of testimony in, any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative.

(2) The term "EXPENSES" shall be broadly construed and shall include, without limitation, court costs, attorneys' fees, witness fees, fines, amounts paid in settlement or judgment and any other costs and expenses of any nature or kind incurred in connection with any proceeding.

(3) The term the "CORPORATION" shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Section 43 with respect to the resulting or surviving corporation as he would have with respect to such constituent corporation if its separate existence had continued.

(4) References to a "DIRECTOR," "EXECUTIVE OFFICER," "OFFICER," "EMPLOYEE," or "AGENT" of the Corporation shall include, without limitation, situations where such person is serving at the request of the Corporation as, respectively, a director, executive officer, officer, employee, trustee or agent of another corporation, partnership, joint venture, trust or other enterprise.

(5) References to "OTHER ENTERPRISES" shall include employee benefit plans; references to "FINES" shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to "SERVING AT THE REQUEST OF THE CORPORATION" shall include any service as a director, officer, employee or agent of the Corporation which imposes duties on, or involves services by, such director, officer, employee, or agent with respect to an employee benefit plan, its participants, or beneficiaries; and a person who acted in good faith and in a manner he reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "NOT OPPOSED TO THE BEST INTERESTS OF THE CORPORATION" as referred to in this Section 43.

ARTICLE XII

NOTICES

SECTION 44. NOTICES.

(a) NOTICE TO STOCKHOLDERS. Written notice to stockholders of stockholder meetings shall be given as provided in Section 7 herein. Without limiting the manner by which notice may otherwise be given effectively to stockholders under any agreement or contract with such stockholder, and except as otherwise required by law, written notice to stockholders for purposes other than stockholder meetings may be sent by U.S. mail or nationally recognized overnight courier, or by facsimile, telegraph or telex or by electronic mail or other electronic means.

(b) NOTICE TO DIRECTORS. Any notice required to be given to any director may be given by the method stated in subsection (a), as otherwise provided in these Bylaws, or by overnight delivery service, facsimile, telex or telegram, except that such notice other than one which is delivered personally shall be sent to such address as such director shall have filed in writing with the Secretary, or, in the absence of such filing, to the last known post office address of such director.

(c) AFFIDAVIT OF MAILING. An affidavit of mailing, executed by a duly authorized and competent employee of the Corporation or its transfer agent appointed with respect to the class of stock affected, or other agent, specifying the name and address or the names and addresses of the stockholder or stockholders, or director or directors, to whom any such notice or notices was or were given, and the time and method of giving the same, shall in the absence of fraud, be prima facie evidence of the facts therein contained.

(d) METHODS OF NOTICE. It shall not be necessary that the same method of giving notice be employed in respect of all recipients of notice, but one permissible method may be employed in respect of any one or more, and any other permissible method or methods may be employed in respect of any other or others.

(e) NOTICE TO PERSON WITH WHOM COMMUNICATION IS UNLAWFUL. Whenever notice is required to be given, under any provision of law or of the Certificate of Incorporation or Bylaws of the Corporation, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the Corporation is such as to require the filing of a certificate under any provision of the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

(f) NOTICE TO STOCKHOLDERS SHARING AN ADDRESS. Except as otherwise prohibited under DGCL, any notice given under the provisions of DGCL, the Certificate of Incorporation or

the Bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Such consent shall have been deemed to have been given if such stockholder fails to object in writing to the Corporation within 60 days of having been given notice by the Corporation of its intention to send the single notice. Any consent shall be revocable by the stockholder by written notice to the Corporation.

ARTICLE XIII

AMENDMENTS

SECTION 45. The Board of Directors is expressly empowered to adopt, amend or repeal the Bylaws of the Corporation. Any adoption, amendment or repeal of the Bylaws of the Corporation by the Board of Directors shall require the approval of a majority of the Board of directors. The stockholders shall also have power to adopt, amend or repeal the Bylaws of the Corporation; provided, however, that, in addition to any vote of the holders of any class or series of stock of the Corporation required by law or by the Certificate of Incorporation, the affirmative vote of the holders of at least sixty-six and two-thirds percent (66-2/3%) of the voting power of all of the then-outstanding shares of the capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required to adopt, amend or repeal any provision of the Bylaws of the Corporation.

ARTICLE XIV

LOANS TO OFFICERS

SECTION 46. LOANS TO OFFICERS. Except as otherwise prohibited by applicable law, the Corporation may lend money to, or guarantee any obligation of, or otherwise assist any officer or other employee of the Corporation or of its subsidiaries, including any officer or employee who is a Director of the Corporation or its subsidiaries, whenever, in the judgment of the Board of Directors, such loan, guarantee or assistance may reasonably be expected to benefit the Corporation. The loan, guarantee or other assistance may be with or without interest and may be unsecured, or secured in such manner as the Board of Directors shall approve, including, without limitation, a pledge of shares of stock of the Corporation. Nothing in these Bylaws shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the Corporation at common law or under any statute.

MANKIND CORPORATION

2004 NON-EMPLOYEE DIRECTORS' STOCK OPTION PLAN

ADOPTED MARCH 23, 2004
APPROVED BY STOCKHOLDERS MARCH 23, 2004
EFFECTIVE DATE: _____, 2004

1. PURPOSES.

(A) ELIGIBLE OPTION RECIPIENTS. The persons eligible to receive Options are the Non-Employee Directors of the Company.

(B) AVAILABLE OPTIONS. The purpose of the Plan is to provide a means by which Non-Employee Directors may be given an opportunity to benefit from increases in value of the Common Stock through the granting of Nonstatutory Stock Options.

(C) GENERAL PURPOSE. The Company, by means of the Plan, seeks to retain the services of its current Non-Employee Directors, to secure and retain the services of new Non-Employee Directors and to provide incentives for such persons to exert maximum efforts for the success of the Company and its Affiliates.

2. DEFINITIONS.

(A) "AFFILIATE" means any parent corporation or subsidiary corporation of the Company, whether now or hereafter existing, as those terms are defined in Sections 424(e) and (f), respectively, of the Code.

(B) "ANNUAL GRANT" means an Option granted annually to all Non-Employee Directors who meet the specified criteria pursuant to Section 6(b).

(C) "ANNUAL MEETING" means the annual meeting of the stockholders of the Company.

(D) "BOARD" means the Board of Directors of the Company.

(E) "CAPITALIZATION ADJUSTMENT" has the meaning ascribed to that term in Section 11(a).

(F) "CODE" means the Internal Revenue Code of 1986, as amended.

(G) "COMMITTEE" means a committee of one or more members of the Board appointed by the Board in accordance with Section 3(c).

(H) "COMMITTEE GRANT" means an Option granted annually to all Non-Employee Directors who meet the specified criteria pursuant to Section 6(c).

(I) "COMMON STOCK" means the common stock of the Company.

(J) "COMPANY" means MannKind Corporation, a Delaware corporation.

(K) "CONSULTANT" means any person, including an advisor, who (i) is engaged by the Company or an Affiliate to render consulting or advisory service and is compensated for such service or (ii) is serving as a member of the Board of Directors of an Affiliate and is compensated for such service. However, service solely as a Director, or payment of a fee for such service, shall not cause a Director to be considered a "Consultant" for purposes of the Plan.

(L) "CONTINUOUS SERVICE" means that the Optionholder's service with the Company or an Affiliate, whether as an Employee, Director or Consultant, is not interrupted or terminated. The Optionholder's Continuous Service shall not be deemed to have terminated merely because of a change in the capacity in which the Optionholder renders service to the Company or an Affiliate as an Employee, Consultant or Director or a change in the entity for which the Optionholder renders such service, provided that there is no interruption or termination of the Optionholder's Continuous Service. For example, a change in status from a Non-Employee Director of the Company to a Consultant of an Affiliate or an Employee of the Company will not constitute an interruption of Continuous Service. The Board or the chief executive officer of the Company, in that party's sole discretion, may determine whether Continuous Service shall be considered interrupted in the case of any leave of absence approved by that party, including sick leave, military leave or any other personal leave. Notwithstanding the foregoing, a leave of absence shall be treated as Continuous Service for purposes of vesting in an Option only to such extent as may be provided in the Company's leave of absence policy or in the written terms of the Optionholders's leave of absence.

(M) "CORPORATE TRANSACTION" means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(I) a sale or other disposition of all or substantially all, as determined by the Board in its discretion, of the consolidated assets of the Company and its Subsidiaries;

(II) a sale or other disposition of at least ninety percent (90%) of the outstanding securities of the Company;

(III) a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(IV) a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

(N) "DIRECTOR" means a member of the Board of Directors of the Company.

(O) "DISABILITY" means the inability of a person, in the opinion of a qualified physician acceptable to the Company, to perform the major duties of that person's position with the Company or an Affiliate of the Company because of the sickness or injury of the person.

(P) "EMPLOYEE" means any person employed by the Company or an Affiliate. However, service solely as a Director, or payment of a fee for such service, shall not cause a Director to be considered an "Employee" for purposes of the Plan.

(Q) "ENTITY" means a corporation, partnership or other entity.

(R) "EXCHANGE ACT" means the Securities Exchange Act of 1934, as amended.

(S) "FAIR MARKET VALUE" means, as of any date, the value of the Common Stock determined as follows:

(I) If the Common Stock is listed on any established stock exchange or traded on the Nasdaq National Market or the Nasdaq SmallCap Market, the Fair Market Value of a share of Common Stock shall be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the last market trading day prior to the day of determination, as reported in The Wall Street Journal or such other source as the Board deems reliable.

(II) In the absence of such markets for the Common Stock, the Fair Market Value shall be determined in good faith by the Board.

(T) "INITIAL GRANT" means an Option granted to a Non-Employee Director who meets the specified criteria pursuant to Section 6(a).

(U) "IPO DATE" means the effective date of the initial public offering of the Common Stock.

(V) "NON-EMPLOYEE DIRECTOR" means a Director who is not an Employee.

(W) "NONSTATUTORY STOCK OPTION" means an Option not intended to qualify as an incentive stock option within the meaning of Section 422 of the Code and the regulations promulgated thereunder.

(X) "OFFICER" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(Y) "OPTION" means a Nonstatutory Stock Option granted pursuant to the Plan.

(Z) "OPTION AGREEMENT" means a written agreement between the Company and an Optionholder evidencing the terms and conditions of an individual Option grant. Each Option Agreement shall be subject to the terms and conditions of the Plan.

(AA) "OPTIONHOLDER" means a person to whom an Option is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Option.

(BB) "OWN," "OWNED," "OWNER," "OWNERSHIP" A person or Entity shall be deemed to "Own," to have "Owned," to be the "Owner" of, or to have acquired "Ownership" of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(CC) "PLAN" means this MannKind Corporation 2003 Non-Employee Directors' Stock Option Plan.

(DD) "RULE 16B-3" means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

(EE) "SECURITIES ACT" means the Securities Act of 1933, as amended.

(FF) "SUBSIDIARY" means, with respect to the Company, (i) any corporation of which more than fifty percent (50%) of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation shall have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than fifty percent (50%).

3. ADMINISTRATION.

(A) ADMINISTRATION BY BOARD. The Plan shall be administered by the Board unless and until the Board delegates administration of the Plan to a Committee, as provided in Section 3(c).

(B) POWERS OF BOARD. The Board shall have the power, subject to, and within the limitations of, the express provisions of the Plan:

(I) To determine the provisions of each Option to the extent not specified in the Plan.

(II) To construe and interpret the Plan and Options granted under it, and to establish, amend and revoke rules and regulations for its administration. The Board, in the exercise of this power, may correct any defect, omission or inconsistency in the Plan or in any Option Agreement, in a manner and to the extent it shall deem necessary or expedient to make the Plan fully effective.

(III) To effect, at any time and from time to time, with the consent of any adversely affected Optionholder, (1) the reduction of the exercise price of any outstanding Option under the Plan, (2) the cancellation of any outstanding Option under the Plan and the grant in substitution therefor of (A) a new Option under the Plan or another equity plan of the

Company covering the same or a different number of shares of Common Stock, (B) cash and/or (C) other valuable consideration (as determined by the Board, in its sole discretion), or (3) any other action that is treated as a repricing under generally accepted accounting principles.

(IV) To amend the Plan or an Option as provided in Section 12.

(V) To terminate or suspend the Plan as provided in Section 13.

(VI) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan.

(C) DELEGATION TO COMMITTEE. The Board may delegate administration of the Plan to a Committee or Committees of one or more members of the Board, and the term "COMMITTEE" shall apply to any person or persons to whom such authority has been delegated. If administration is delegated to a Committee, the Committee shall have, in connection with the administration of the Plan, the powers theretofore possessed by the Board, including the power to delegate to a subcommittee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board shall thereafter be to the Committee or subcommittee), subject, however, to such resolutions, not inconsistent with the provisions of the Plan, as may be adopted from time to time by the Board. The Board may abolish the Committee at any time and revert in the Board the administration of the Plan.

(D) EFFECT OF BOARD'S DECISION. All determinations, interpretations and constructions made by the Board in good faith shall not be subject to review by any person and shall be final, binding and conclusive on all persons.

4. SHARES SUBJECT TO THE PLAN.

(A) SHARE RESERVE. Subject to the provisions of Section 11(a) relating to Capitalization Adjustments, the shares of Common Stock that may be issued pursuant to Options shall not exceed in the aggregate eight hundred thousand (800,000) shares of Common Stock.

(B) REVERSION OF SHARES TO THE SHARE RESERVE. If any Option shall for any reason expire or otherwise terminate, in whole or in part, without having been exercised in full, the shares of Common Stock not acquired under such Option shall revert to and again become available for issuance under the Plan. If any shares subject to an Option are not delivered to an Optionholder because such shares are withheld for the payment of taxes or the Option is exercised through a reduction of shares subject to the Option (i.e., "net exercised"), the number of shares that are not delivered to the Optionholder as a result thereof shall remain available for issuance under the Plan. If the exercise price of an Option is satisfied by tendering shares of Common Stock held by the Optionholder (either by actual delivery or attestation), then the number of shares so tendered shall remain available for issuance under the Plan.

(C) SOURCE OF SHARES. The shares of Common Stock subject to the Plan may be unissued shares or reacquired shares, bought on the market or otherwise.

5. ELIGIBILITY.

The Options, as set forth in Section 6, automatically shall be granted under the Plan to all Non-Employee Directors who meet the criteria specified in Section 6.

6. NON-DISCRETIONARY GRANTS.

(A) INITIAL GRANTS. Without any further action of the Board, each person who is serving as a Non-Employee Director on the IPO Date automatically shall, on the IPO Date, be granted an Initial Grant to purchase thirty thousand (30,000) shares of Common Stock on the terms and conditions set forth herein. Additionally, without any further action of the Board, each person who after the IPO Date is elected or appointed for the first time to be a Non-Employee Director automatically shall, upon the date of his or her initial election or appointment to be a Non-Employee Director, be granted an Initial Grant to purchase thirty thousand (30,000) shares of Common Stock on the terms and conditions set forth herein.

(B) ANNUAL GRANTS. Without any further action of the Board, on the date of each Annual Meeting, commencing with the Annual Meeting in 2005, each person who is then a Non-Employee Director automatically shall be granted an Annual Grant to purchase ten thousand (10,000) shares of Common Stock on the terms and conditions set forth herein; provided, however, that if the person has not been serving as a Non-Employee Director for the entire period since the preceding Annual Meeting, then the number of shares subject to such Annual Grant shall be reduced pro rata for each full quarter prior to the date of grant during which such person did not serve as a Non-Employee Director.

7. OPTION PROVISIONS.

Each Option shall be in such form and shall contain such terms and conditions as required by the Plan. Each Option shall contain such additional terms and conditions, not inconsistent with the Plan, as the Board shall deem appropriate. Each Option shall include (through incorporation of provisions hereof by reference in the Option or otherwise) the substance of each of the following provisions:

(A) TERM. No Option shall be exercisable after the expiration of ten (10) years from the date on which it was granted.

(B) EXERCISE PRICE. The exercise price of each Option shall be one hundred percent (100%) of the Fair Market Value of the Common Stock subject to the Option on the date the Option is granted.

(C) CONSIDERATION. The purchase price of Common Stock acquired pursuant to an Option shall be paid, to the extent permitted by applicable law, either (i) in cash at the time the Option is exercised or (ii) at the discretion of the Board either at the time of the grant of the Option or subsequent thereto (1) by delivery to the Company of other Common Stock at the time the Option is exercised, (2) by a "net exercise" of the Option (as further described below), (3) pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of Common Stock, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to

the Company from the sales proceeds or (4) in any other form of legal consideration that may be acceptable to the Board. Unless otherwise specifically provided in the Option, the purchase price of Common Stock acquired pursuant to an Option that is paid by delivery to the Company of other Common Stock acquired, directly or indirectly from the Company, shall be paid only by shares of the Common Stock of the Company that have been held for more than six (6) months (or such longer or shorter period of time required to avoid a charge to earnings for financial accounting purposes).

In the case of a "net exercise" of an Option, the Company will not require a payment of the exercise price of the Option from the Participant but will reduce the number of shares of Common Stock issued upon the exercise by the largest number of whole shares that has a Fair Market Value that does not exceed the aggregate exercise price. With respect to any remaining balance of the aggregate exercise price, The Company shall accept a cash payment from the Participant. Shares of Common Stock will no longer be outstanding under an Option (and will therefore not thereafter be exercisable) following the exercise of such Option to the extent of (i) shares used to pay the exercise price of an Option under a "net exercise", (ii) shares actually delivered to the Participant as a result of such exercise and (iii) shares withheld for purposes of tax withholding.

(D) TRANSFERABILITY. An Option is transferable by will or by the laws of descent and distribution. An Option also may be transferable upon written consent of the Company if, at the time of transfer, a Form S-8 registration statement under the Securities Act is available for the exercise of the Option and the subsequent resale of the underlying securities. In addition, an Optionholder may, by delivering written notice to the Company, in a form provided by or otherwise satisfactory to the Company, designate a third party who, in the event of the death of the Optionholder, shall thereafter be entitled to exercise the Option.

(E) VESTING. Initial Grants shall vest in three, equal annual installments on each anniversary of the IPO Date, in the case of each person who is serving as a Non-Employee Director on the IPO Date, or on each anniversary of his or her initial election or appointment to be a Non-Employee Director, in the case of each person who after the IPO Date is elected or appointed for the first time to be a Non-Employee Director. Annual Grants shall vest in full immediately upon grant.

(F) TERMINATION OF CONTINUOUS SERVICE. In the event an Optionholder's Continuous Service terminates for any reason, the Optionholder may exercise his or her Option (to the extent that the Optionholder was entitled to exercise it as of the date of termination) but only within such period of time ending on the expiration of the term of the Option as set forth in the Option Agreement. If, after termination, the Optionholder does not exercise his or her Option within the time specified in the Option Agreement, the Option shall terminate.

8. SECURITIES LAW COMPLIANCE.

The Company shall seek to obtain from each regulatory commission or agency having jurisdiction over the Plan such authority as may be required to grant Options and to issue and sell shares of Common Stock upon exercise of the Options; provided, however, that this undertaking shall not require the Company to register under the Securities Act the Plan, any Option or any

Common Stock issued or issuable pursuant to any such Option. If, after reasonable efforts, the Company is unable to obtain from any such regulatory commission or agency the authority which counsel for the Company deems necessary for the lawful issuance and sale of Common Stock under the Plan, the Company shall be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Options unless and until such authority is obtained.

9. USE OF PROCEEDS FROM STOCK.

Proceeds from the sale of Common Stock pursuant to Options shall constitute general funds of the Company.

10. MISCELLANEOUS.

(A) STOCKHOLDER RIGHTS. No Optionholder shall be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to such Option unless and until such Optionholder has satisfied all requirements for exercise of the Option pursuant to its terms.

(B) NO SERVICE RIGHTS. Nothing in the Plan or any instrument executed or Option granted pursuant thereto shall confer upon any Optionholder any right to continue to serve the Company as a Non-Employee Director or shall affect the right of the Company or an Affiliate to terminate (i) the employment of an Employee with or without notice and with or without cause, (ii) the service of a Consultant pursuant to the terms of such Consultant's agreement with the Company or an Affiliate or (iii) the service of a Director pursuant to the Bylaws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state in which the Company or the Affiliate is incorporated, as the case may be.

(C) INVESTMENT ASSURANCES. The Company may require an Optionholder, as a condition of exercising or acquiring Common Stock under any Option, (i) to give written assurances satisfactory to the Company as to the Optionholder's knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters and that he or she is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Option; and (ii) to give written assurances satisfactory to the Company stating that the Optionholder is acquiring the Common Stock subject to the Option for the Optionholder's own account and not with any present intention of selling or otherwise distributing the Common Stock. The foregoing requirements, and any assurances given pursuant to such requirements, shall be inoperative if (1) the issuance of the shares of Common Stock upon the exercise or acquisition of Common Stock under the Option has been registered under a then currently effective registration statement under the Securities Act or (2) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the Common Stock.

(D) WITHHOLDING OBLIGATIONS. To the extent provided by the terms of an Option Agreement, the Company may in its sole discretion, satisfy any federal state or local tax withholding obligation relating to an Option by any of the following means (in addition to the Company's right to withhold from any compensation paid to the Participant by the Company) or by a combination of such means: (i) causing the Optionholder to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to the Optionholder in connection with the Option; or (iii) via such other method as may be set forth in the Option Agreement.

11. ADJUSTMENTS UPON CHANGES IN COMMON STOCK.

(A) CAPITALIZATION ADJUSTMENTS. If any change is made in, or other event occurs with respect to, the Common Stock subject to the Plan, or subject to any Option, without the receipt of consideration by the Company (through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or other transaction not involving the receipt of consideration by the Company (each a "CAPITALIZATION ADJUSTMENT"), the Plan will be appropriately adjusted in the class(es) and maximum number of securities subject both to the Plan pursuant to Section 4 and to the nondiscretionary Options specified in Section 6, and the outstanding Options will be appropriately adjusted in the class(es) and number of securities and price per share of Common Stock subject to such outstanding Options. The Board shall make such adjustments, and its determination shall be final, binding and conclusive. (Notwithstanding the foregoing, the conversion of any convertible securities of the Company shall not be treated as a transaction "without receipt of consideration" by the Company.)

(B) DISSOLUTION OR LIQUIDATION. In the event of a dissolution or liquidation of the Company, then all outstanding Options shall terminate immediately prior to the completion of such dissolution or liquidation.

(C) CORPORATE TRANSACTION. In the event of a Corporate Transaction, any surviving corporation or acquiring corporation may assume or continue any or all Options outstanding under the Plan or may substitute similar stock options for Options outstanding under the Plan (including, but not limited to, options to acquire the same consideration paid to the stockholders of the Company, as the case may be, pursuant to the Corporate Transaction). In the event that any surviving corporation or acquiring corporation does not assume or continue all such outstanding Options or substitute similar stock options for all such outstanding Options, then with respect to Options that have been not assumed, continued or substituted, the Options shall terminate if not exercised (if applicable) at or prior to the effective time of such Corporate Transaction.

12. AMENDMENT OF THE PLAN AND OPTIONS.

(A) AMENDMENT OF PLAN. Subject to the limitations, if any, of applicable law, the Board, at any time and from time to time, may amend the Plan. However, except as provided in Section 11(a) relating to Capitalization Adjustments, no amendment shall be effective unless

approved by the stockholders of the Company to the extent stockholder approval is necessary to satisfy the requirements of applicable law.

(B) STOCKHOLDER APPROVAL. The Board, in its sole discretion, may submit any other amendment to the Plan for stockholder approval.

(C) NO IMPAIRMENT OF RIGHTS. Rights under any Option granted before amendment of the Plan shall not be impaired by any amendment of the Plan unless (i) the Company requests the consent of the Optionholder and (ii) the Optionholder consents in writing.

(D) AMENDMENT OF OPTIONS. The Board, at any time, and from time to time, may amend the terms of any one or more Options, including, but not limited to, amendments to provide terms more favorable than previously provided in the agreement evidencing an Option, subject to any specified limits in the Plan that are not subject to Board discretion; provided, however, that the rights under any Option shall not be impaired by any such amendment unless (i) the Company requests the consent of the Optionholder and (ii) the Optionholder consents in writing.

13. TERMINATION OR SUSPENSION OF THE PLAN.

(A) PLAN TERM. The Board may suspend or terminate the Plan at any time. No Options may be granted under the Plan while the Plan is suspended or after it is terminated.

(B) NO IMPAIRMENT OF RIGHTS. Suspension or termination of the Plan shall not impair rights and obligations under any Option granted while the Plan is in effect except with the written consent of the Optionholder.

14. EFFECTIVE DATE OF PLAN.

The Plan shall become effective on the IPO Date, but no Option shall be exercised unless and until the Plan has been approved by the stockholders of the Company, which approval shall be within twelve (12) months before or after the date the Plan is adopted by the Board.

15. CHOICE OF LAW.

The law of the state of California shall govern all questions concerning the construction, validity and interpretation of this Plan, without regard to such state's conflict of laws rules.

PHARMACEUTICAL DISCOVERY CORPORATION

1991 STOCK OPTION PLAN

ARTICLE 1

GENERAL

1.1 Purpose. The purpose of this Pharmaceutical Discovery Corporation 1991 Stock Option Plan (the "Plan") is to provide for certain key employees of Pharmaceutical Development Corporation, a Delaware corporation (the "Company"), an incentive (i) to join and remain in the service of the Company, (ii) to maintain and enhance the long-term performance and profitability of the Company and its subsidiaries, and (iii) to acquire a proprietary interest in the success of the Company.

1.2 Definition of Certain Terms.

(a) "Agreement" means an agreement issued pursuant to Section 2.1.

(b) "Board" means the Board of Directors of the Company.

(c) "Code" means the Internal Revenue Code of 1986, as amended.

(d) "Committee" means the committee appointed to administer the Plan in accordance with Section 1.3.

(e) "Common Stock" means the shares of common stock, no par value per share, of the Company and any other shares into which such common stock shall thereafter be

exchanged by reason of a recapitalization, merger, consolidation, split-up, combination, exchange of shares or the like.

(f) "Company" means Pharmaceutical Discovery Corporation.

(g) "Optionee" means an employee of the Company who has been awarded any award under this Plan.

(h) "Options" means any incentive stock options or "nonqualified" stock options, both as described in Section 1.5, granted under the Plan.

(i) "Plan" means the Pharmaceutical Discovery Corporation 1991 Stock Option Plan.

(j) "Termination With Cause," with respect to any Optionee, means termination by the Company of such Optionee's employment for: (i) misappropriation of corporate funds, (ii) conviction of a felony involving moral turpitude, (iii) willful violation of reasonable written directions of the Chief Executive Officer or the Board of Directors of the Company; or (iv) gross and willful misconduct, provided, however, that no discharge shall be deemed Termination With Cause under this clause (iv) unless such Optionee shall have first received written notice from the Chief Executive Officer or the Board of Directors of the Company advising such Optionee of the specific acts or omissions alleged to constitute such gross and willful misconduct, and such misconduct continues

after such Optionee shall have had a reasonable opportunity to correct the misconduct so complained of.

1.3 Administration.

(a) (i) Subject to Section 1.3(e), the Plan shall be administered by a committee of the Board which shall consist of not less than three directors and which shall have the power of the Board to authorize awards under the Plan. The members of the Committee shall be appointed by, and may be changed from time to time in the discretion of, the Board.

(ii) No person shall serve as a member of the Committee if such person is then, or was at any time within one year prior thereto, eligible for selection as a person to whom awards may be granted under the Plan, or under any other plan of the Company or any of its affiliates entitling the participants therein to acquire stock, stock options or stock appreciation rights of the Company or any of its affiliates. The term "affiliate" as used in the preceding sentence means any person or entity which, at the time of reference, directly, or indirectly through one or more intermediaries, (i) controls the Company or (ii) is controlled by, or is under common control with the Company.

(b) The Committee shall have the authority (i) to exercise all of the powers granted to it under the Plan, (ii) to construe, interpret and implement the Plan and any Agreement executed pursuant to Section 2.1, (iii) to prescribe, amend and

rescind rules and regulations relating to the Plan, (iv) to make all determinations necessary or advisable in administering the Plan, and (v) to correct any defect, supply any omission and reconcile any inconsistency in the Plan.

(c) The determination of the Committee on all matters relating to the Plan or any Agreement shall be conclusive.

(d) No member of the Committee shall be liable for any action or determination made in good faith with respect to the Plan or any award thereunder.

(e) Notwithstanding anything to the contrary contained herein: (i) until the Board shall appoint the members of the Committee, the Plan shall be administered by the Board; and (ii) the Board may, in its sole discretion, at any time and from time to time, resolve to administer the Plan. In either of the foregoing events, the term "Committee" as used herein shall be deemed to mean the Board.

1.4 Persons Eligible for Awards. Awards under the Plan may be made from time to time to such key employees of the Company as the Committee shall in its sole discretion select; provided, however, that an incentive stock option may not be granted to an individual who is not also a common law employee of the Company or one of its subsidiaries on the date of grant.

1.5 Types of Awards Under Plan. Awards may be made under the Plan in the form of (a) stock options which may, in

the Committee's discretion, be granted either as (i) "nonqualified" stock options subject to the provisions of section 83 of the Code, or (ii) "incentive stock options" described in section 422 of the Code, all as more fully described in Article 2.

1.6 Shares Available for Awards.

(a) Subject to Section 3.4 (relating to adjustments upon changes in capitalization), as of any date the total number of shares of Common Stock with respect to which Options may be outstanding under the Plan shall be equal to the excess (if any) of (i) 300 shares over (ii) the sum of (A) the number of shares subject to outstanding Options granted under the Plan, (B) the number of shares previously transferred pursuant to the exercise of Options granted under the Plan. In accordance with (and without limitation upon) the preceding sentence, shares of Common Stock covered by Options granted under the Plan which expire or terminate for any reason shall again become available for award under the Plan.

(b) Shares of stock that shall be issued upon the exercise of Options awarded under the Plan shall be authorized and unissued or treasury shares of Common Stock.

(c) Without limiting the generality of the preceding provisions of this Section 1.6, the Committee may, but solely with the Optionee's consent, agree to cancel any award of Options under the Plan and issue a new award in substitution

therefor, provided that the award as so substituted shall satisfy all of the requirements of the Plan as of the date such new award is made.

ARTICLE 2

STOCK OPTIONS

2.1 Agreements Evidencing Stock Options.

(a) Options awarded under the Plan shall be evidenced by written agreements ("Agreements") which shall not be inconsistent with the terms and provisions of the Plan, and, in the case of incentive stock options, of section 422 of the Code, and which shall contain such provisions as the Committee may in its sole discretion deem necessary or desirable. Without limiting the generality of the foregoing, the Committee may in any Agreement impose such restrictions or conditions upon the exercise of such Option or upon the sale or other disposition of the shares of Common Stock issuable upon exercise thereof as the Committee may in its sole discretion determine. By accepting an award pursuant to the Plan each Optionee shall thereby agree that each such award shall be subject to all of the terms and provisions of the Plan, including but not limited to the provisions of Section 1.3(d).

(b) Each Agreement shall set forth the number of shares of Common Stock subject to the Option granted thereby.

(c) Each Agreement shall set forth the amount payable by the Optionee to the Company upon exercise of the option evidenced thereby. The option exercise price of a "nonqualified" stock option shall not be less than 85% of the fair market value of a share of Common Stock on the date the option is granted, and in the case of an incentive stock option, the exercise price per share shall not be less than the fair marketvalue (determined by the Committee in its sole discretion) of a share of Common Stock on the date the option is granted.

(d) An Option granted under this Plan shall be an incentive stock option only if the relevant Plan agreement by its terms (i) expressly sets forth the rule described in Sections 2.5 and 2.6 hereof, and (ii) expressly states that it is intended to qualify as an incentive stock option. Any Option granted under this Plan which does not satisfy the foregoing requirements of this Section 2.1(d) is intended to be a nonqualified option subject to the provisions of section 83 of the Code, and is intended not to qualify for incentive stock option treatment under section 422 of the Code.

2.2 Term of Options. Each Agreement shall set forth the period during which the Option evidenced thereby shall be exercisable, whether in whole or in part, such periods to be determined by the Committee in its discretion; provided that, notwithstanding the foregoing or any other provision of

the Plan, no Agreement shall permit a nonqualified option to be exercisable more than 10 years after the date of grant; provided further that, notwithstanding the foregoing or any other provision of the Plan, no Agreement shall permit an incentive stock option to be exercisable more than 10 years after the date of grant.

2.3 Exercise of Options. Subject to the provisions of this Article 2, each Option granted under the Plan shall be exercisable as follows:

(a) An Option shall become exercisable at such times and subject to such conditions as the applicable Agreement may provide.

(b) Unless the applicable Agreement otherwise provides, an Option granted under the Plan may be exercised from time to time as to all or part of the shares as to which such Option shall then be exercisable.

(c) An Option shall be exercisable by the filing of a written notice of exercise with the Company, on such form and in such manner as the Committee shall in its sole discretion prescribe.

(d) Any written notice of exercise of an Option shall be accompanied by payment of the exercise price for the shares being purchased. Such payment shall be made by certified or official bank check payable to the Company (or the equivalent thereof acceptable to the Committee). As soon as

practicable after receipt of such payment, the Company shall deliver to the Optionee a certificate or certificates for the shares of Common Stock so purchased.

2.4 Termination of Employment.

(a) Except as the Agreement may otherwise provide, all Options granted to an Optionee (and not theretofore exercised) shall terminate within three months of the Optionee's termination of employment with the Company for any reason except for death.

(b) Notwithstanding anything to the contrary in this Plan, all Options granted to an Optionee shall immediately expire and cease to be exercisable and all rights granted to an Optionee under this Plan and such Optionee's Agreement shall expire if such Optionee's employment with the Company is Terminated with Cause by the Company at any time.

2.5 \$100,000 Annual Limitation on Incentive Stock Options Exercisable During Any Calendar Year.

(a) Subject to the further provisions of this Section 2.5, to the extent that the aggregate fair market value of stock with respect to which incentive stock options (determined without regard to the provisions of this Section 2.5) are exercisable for the first time by any Optionee during any calendar year (under all plans of the Optionee's employer corporation and its parent and subsidiary corporations) exceeds \$100,000, such options shall be treated as options that are "nonqualified" stock options.

(b) For purposes of Section 2.5(a), which shall be applied by taking options into account in the order in which they were granted, the fair market value of any stock shall be determined as of the time the option with respect to such stock is granted.

(c) In applying the provisions of Section 2.5(a), there shall be taken into account solely (i) incentive stock options granted to an Optionee under this Plan, and (ii) incentive stock options granted to the Optionee after December 31, 1986 under all other stock option plans of the Optionee's employer corporation, and its parent or subsidiary corporations.

(d) The foregoing provisions of this Section 2.5 shall in no way limit or restrict the aggregate fair market value of the stock which may become exercisable in any calendar year under nonqualified options granted under the Plan or under any other stock option plan of the Optionee's employer corporation, or its parent or subsidiary corporations.

2.6 Special Rules for 10% Stockholders.

Notwithstanding any provisions to the contrary, an incentive stock option may not be granted under this Plan to an individual who, at the time the option is granted, owns stock possessing more than 10% of the total combined voting power of all classes of stock of his employer corporation or of its parent or subsidiary corporations (as such ownership may be determined for purposes of section 422(b)(6) of the Code)

unless (a) at the time such incentive stock option is granted the option exercise price is at least 110% of the fair market value of the shares subject to the incentive stock option and (b) the incentive stock option by its terms is not exercisable after the expiration of 5 years from the date such incentive stock option is granted.

ARTICLE 3

MISCELLANEOUS

3.1 Amendment of the Plan; Modification of Awards.

(a) The Board may, without stockholder approval, from time to time suspend or discontinue the Plan or revise or amend it in any respect whatsoever, except that no such amendment shall alter or impair any rights or obligations under any award theretofore made under the Plan without the consent of the person to whom such award was made. Furthermore, except as and to the extent otherwise permitted by Section 3.4, no such amendment shall, without stockholder approval:

(i) increase, beyond the amounts set forth in Section 1.6, the number of shares of Common Stock in respect of which awards may be granted;

(ii) change the designation in Section 1.4 of the class of persons eligible to receive awards under the Plan; or

(iii) extend the term of the Plan beyond the period set forth in Section 3.12.

(b) With the consent of the Optionee and subject to the terms and conditions of the Plan (including Section 3.1(a)), the Committee may amend outstanding Agreements with such Optionee, including, without limitation, any amendment which would (i) accelerate the time or times at which an award may be exercised and/or (ii) extend the scheduled expiration date of the award.

3.2 Nonassignability. No right granted to any Optionee under the Plan or under any Agreement shall be assignable or transferable other than by will or by the laws of descent and distribution. During the life of the Optionee, all rights granted to the Optionee under the Plan or under any Agreement shall be exercisable only by the Optionee.

3.3 Withholding Taxes.

(a) The Company shall be entitled to withhold an amount sufficient to satisfy any federal, state and other governmental withholding tax requirements related thereto. Whenever under the Plan shares of Common Stock are to be delivered upon exercise of an option, the Company shall be entitled to require as a condition of delivery that the Optionee remit an amount sufficient to satisfy all federal, state and other governmental withholding tax requirements related thereto.

3.4 Adjustments Upon Changes in Capitalization. If and to the extent specified by the Committee, the number of shares of Common Stock which may be transferred pursuant to the exercise of Options granted under the Plan may be appropriately adjusted (as the Committee may determine) for any increase or decrease in the number of issued shares of Common Stock resulting from the subdivision or combination of shares of Common Stock or other capital adjustments, or the payment of a stock dividend after the effective date of this Plan, or other increase or decrease in the number of such shares of Common Stock effected without receipt of consideration by the Company; provided, however, that any Options to purchase fractional shares of Common Stock resulting from any such adjustment may be eliminated. Adjustments under this Section shall be made by the Committee, whose determination as to what adjustments shall be made, and the extent thereof, shall be final, binding and conclusive.

3.5 Right of Discharge Reserved. Nothing in this Plan or in any Agreement shall confer upon any employee or other person the right to continue in the employment or service of the Company or affect any right which the Company may have to terminate the employment or service of such employee or other person.

3.6 No Rights as a Stockholder. No Optionee or other person exercising an Option shall have any of the rights

of a stockholder of the Company with respect to shares subject to an option until the issuance of a stock certificate to the Optionee for such shares. Except as otherwise provided in Section 3.4, no adjustment shall be made for dividends, distributions or other rights (whether ordinary or extraordinary, and whether in cash, securities or other property) for which the record date is prior to the date such stock certificate is issued.

3.7 Nature of Payments.

(a) Any and all payments of shares of Common Stock hereunder shall be granted, transferred or paid in consideration of services performed for the Company or for its subsidiaries by the Optionee.

(b) All such grants, issuances and payments shall constitute a special incentive payment to the Optionee and shall not, unless otherwise determined by the Committee, be taken into account in computing the amount of salary or compensation of the Optionee for the purposes of determining any pension, retirement, death or other benefits under (i) any Pension, retirement, life insurance or other benefit plan of the Company or any subsidiary or (ii) any agreement between the Company or any subsidiary, on the one hand, and the Optionee, on the other hand.

3.8 Non-Uniform Determinations. The Committee's determinations under the Plan need not be uniform and may be

made by it selectively among persons who receive, or are eligible to receive, awards under the Plan (whether or not such persons are similarly situated). Without limiting the generality of the foregoing, the Committee shall be entitled, among other things, to make non-uniform and selective determinations, and to enter into non-uniform and selective Agreements, as to (i) the persons to receive awards under the Plan, and (ii) the terms and provisions of awards under the Plan.

3.9 Other Payments or Awards. Nothing contained in the Plan shall be deemed in any way to limit or restrict the Company, any subsidiary or the Committee from making any award or payment to any person under any other plan, arrangement or understanding, whether now existing or hereafter in effect.

3.10 Restrictions.

(a) If the Committee shall at any time determine that any Consent (as hereinafter defined) is necessary or desirable as a condition of, or in connection with, the granting of any award under the Plan, the issuance or purchase of shares or other rights thereunder or the taking of any other action thereunder (each such action being hereinafter referred to as a "Plan Action"), then such Plan Action shall not be taken, in whole or in part, unless and until such Consent shall have been effected or obtained to the full satisfaction of the Committee.

(b) The term "Consent" as used herein with respect to any Plan Action means (i) any and all listing, registrations or qualifications in respect thereof upon any securities exchange or under any federal, state or local law, rule or regulation, (ii) any and all written agreements and representations by the grantee with respect to the disposition of shares, or with respect to any other matter, which the Committee shall deem necessary or desirable to comply with the terms of any such listing, registration or qualification or to obtain an exemption from the requirement that any such listing, qualification or registration be made and (iii) any and all consents, clearances and approvals in respect of a Plan Action by any governmental or other regulatory bodies.

3.11 Section Headings. The section headings contained herein are for the purposes of convenience only and are not intended to define or limit the contents of said sections.

3.12 Effective Date and Term of Plan.

(a) This Plan shall be deemed adopted and become effective upon the approval thereof by the Board; provided that, notwithstanding any other provision of this Plan, no award made under the Plan shall be exercisable unless the Plan is approved by (1) the express consent of shareholders holding at least a majority of the Company's voting Stock voting in person or by proxy at a duly held shareholders'

meeting, or (2) the unanimous written consent of shareholders of the Company, within 12 months before or after the date the Plan is adopted.

(b) The Plan shall terminate 10 years after the earlier of the date on which it is adopted or the date on which it is approved by shareholders, and no awards shall thereafter be made under the Plan. Notwithstanding the foregoing, all awards made under the Plan prior to such date shall remain in effect until such awards have been satisfied or terminated in accordance with the terms and provisions of the Plan.

3.13 Registration.

The Company will use its best efforts to cause a registration statement with respect to the Common Stock issuable under the Plan, registering such shares pursuant to the Securities Act of 1933, as amended, to be filed with the Securities and Exchange Commission, eighteen months after such time as the Company becomes a reporting corporation under Section 12 or 15 of the Securities Exchange Act of 1934, as amended.

PHARMACEUTICAL DISCOVERY CORPORATION
1999 STOCK PLAN

Section 1. PURPOSE OF PLAN

Pharmaceutical Discovery Corporation, a Delaware corporation (the "Company"), hereby adopts the 1999 Stock Plan as set forth herein (this "Plan"). The purpose of this Plan is to enable the Company and its subsidiaries to attract, retain and motivate their directors, employees, consultants and advisers by providing for or increasing the proprietary interests of such persons in the Company, thereby increasing the mutuality of interest between such persons and the Company's stockholders.

Section 2. PERSONS ELIGIBLE UNDER PLAN

Any person, including any director of the Company, who is a director, employee, consultant or adviser of the Company or any of its subsidiaries (a "Grantee") shall be eligible to be considered for the grant of Awards (as hereinafter defined) hereunder; provided, however, that only those Grantees who are employees of the Company or any of its subsidiaries shall be eligible to be considered for the grant of Incentive Stock Options (as hereinafter defined) hereunder; provided, further, that Non-Employee Directors (as hereinafter defined) shall be eligible only for Awards granted pursuant to Section 11 of this Plan.

Section 3. AWARDS

(a) The Board of Directors of the Company (the "Board") or the Committee (as hereinafter defined), on behalf of the Company, is authorized under this Plan to enter into any type of arrangement with a Grantee that is not inconsistent with the provisions of this Plan and that, by its terms, involves or might involve the issuance of (i) shares of Common Stock, par value \$.01 per share, of the Company (the "Common Shares") or (ii) a Derivative Security (as such term is defined in Rule 16a-1 promulgated under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as such Rule may be amended from time to time) with an exercise or conversion privilege at a price related to the Common Shares or with a value derived from the value of the Common Shares. The entering into of any such arrangement is referred to herein as the "grant" of an "Award."

(b) Awards are not restricted to any specified form or structure and may include, without limitation, sales or bonuses of stock, restricted stock, stock options, reload stock options, stock purchase warrants, other rights to acquire stock, securities convertible into or redeemable for stock, stock appreciation rights, limited stock appreciation rights, phantom stock, dividend equivalents, performance units or performance shares, and an Award may consist of one such security or benefit, or two or more of them in tandem or in the alternative.

(c) Common Shares may be issued pursuant to an Award for any lawful consideration as determined by the Committee, including, without limitation, services rendered by the recipient of such Award.

(d) Awards in the form of options shall provide for an exercise price which is not less than 85% of the fair value of the stock at the time the option is granted, except that the price shall be 110% of the fair value in the case of an Incentive Stock Option (as hereinafter defined) granted to any person who owns stock possessing more than 10% of the total combined voting power of all classes of stock of the Company. For purposes of this Paragraph (d) the fair value of stock issuable upon exercise of an option shall be determined by the Board of Directors of the Company or Committee taking into account the following:

(i) If Stock of the same class is publicly traded in an active market of substantial depth, the recent market price of such securities.

(ii) If stock of the same class has not been so publicly traded the price at which securities of reasonably comparable corporations (if any) in the same industry are being traded subject to appropriate adjustment for the dissimilarities between corporations being compared.

(iii) In the absence of any reliable indicator under subparagraph (i) and (ii) above, the earnings history, book value and prospects of the Company in the light of market conditions generally.

(e) The exercise period for awards granted in the form of options shall be not more than 120 months from the date the option is granted.

(f) Awards granted in the form of options shall provide that the holder of the option shall have the right to exercise in the event of termination of employment, to the extent that the holder is entitled to exercise on the date employment terminates, as follows:

(i) At least six months from the date of termination if termination was caused by death or disability

(ii) At least 30 days from the date of termination if termination was caused other than by death or disability.

(g) Subject to the other specific provisions of this Plan, the Board or the Committee, in its sole and absolute discretion, shall determine all of the terms and conditions of each Award granted under this Plan, which terms and conditions may include, among other things:

(i) A provision permitting the recipient of such Award, including any recipient who is a director or officer of the Company, to pay the purchase price of the Common Shares or other property issuable pursuant to such Award, or such recipient's tax withholding obligation with respect to such issuance, in whole or in part, by any one or more of the following:

(A) the delivery of previously owned shares of capital stock of the

Company (including "pyramiding") or other property,

(B) a reduction in the amount of Common Shares or other property otherwise issuable pursuant to such Award, or

(C) the delivery of a promissory note, the terms and conditions of which shall be determined by the Committee; or

(ii) A provision required in order for such Award to qualify as an incentive stock option under Section 422 of the Internal Revenue Code (an "Incentive Stock Option").

Section 4. STOCK SUBJECT TO PLAN; ANNUAL GRANT LIMITATION

(a) The aggregate number of Common Shares that may be issued pursuant to all Incentive Stock Options granted under this Plan shall be 6,045,334. Such maximum number does not include the number of Common Shares subject to the unexercised portion of any Incentive Stock Option granted under this Plan that expires or is terminated. Such maximum number of Common Shares is subject to adjustment as provided in Section 7 hereof (and is referred to herein as the "Share Limitation"). If any Award shall expire, terminate or be reacquired by the Company for any reason, the unexercised or reacquired portion thereof shall again be available for the grant of Awards hereunder.

(b) At any time, the aggregate number of Common Shares issued and issuable pursuant to all Awards (including all Incentive Stock Options) granted under this Plan shall not exceed the Share Limitation, subject to adjustment as provided in Section 7 hereof. Notwithstanding the foregoing, the Board may at any time and from time to time increase the aggregate number of Common Shares issued and issuable pursuant to all Awards granted under this Plan to a number of Common Shares not exceeding fourteen percent (14%) of aggregate number of Common Shares outstanding on an undiluted basis as shown on the then most recent audited financial statement of the Company; provided that no such increase shall in any event affect the aggregate number of Common Shares that may be issued pursuant to all Incentive Stock Options granted under this Plan.

(c) For purposes of Section 4(b) hereof, the aggregate number of Common Shares issued and issuable pursuant to Awards granted under this Plan shall at any time be deemed to be equal to the sum of the foregoing:

(i) The number of Common Shares which were issued prior to such time pursuant to Awards granted under this Plan excluding (except for purposes of computing the Share Limitation applicable to Incentive Stock Options granted under this Plan) shares which were reacquired by the Company pursuant to provisions in the Awards with respect to which those shares were issued giving the Company the right to reacquire such shares upon the occurrence of certain events; plus

(ii) The number of Common Shares which are or may be issuable at or after such time pursuant to outstanding Awards granted under this Plan prior to such time.

(d) In no event shall any Grantee receive, in any fiscal year, Awards which exceed an aggregate of 500,000 Common Shares.

Section 5. DURATION OF PLAN

No Awards shall be granted under this Plan after October 15, 2009. Although Common Shares may be issued after October 15, 2009 pursuant to Awards granted prior to such date, no Common Shares shall be issued under this Plan after October 15, 2019.

Section 6. ADMINISTRATION OF PLAN

(a) This Plan shall be administered by the Board or a committee thereof (the "Committee") consisting of two or more non-employee directors.

(b) Subject to the provisions of this Plan, the Board or the Committee shall be authorized and empowered to do all things necessary or desirable in connection with the administration of this Plan, including, without limitation, the following:

(i) Adopt, amend and rescind rules and regulations relating to this Plan;

(ii) Determine which persons meet the requirements of Section 2 hereof for eligibility under this Plan and to which of such eligible persons, if any, Awards shall be granted hereunder;

(iii) Grant Awards to eligible persons and determine the terms and conditions thereof, including the number of Common Shares issuable pursuant thereto;

(iv) Determine whether, and the extent to which, adjustments are required pursuant to Section 7 hereof; and

(v) Interpret and construe this Plan and the terms and conditions of any Award granted hereunder.

Section 7. ADJUSTMENTS; ACCELERATION UPON CHANGE IN CONTROL

(a) Adjustments. If the outstanding securities of the class then subject to this Plan are increased, decreased or exchanged for or converted into a different number or kind of shares or securities of the Company as a result of a reorganization, merger, consolidation, recapitalization, restructuring, reclassification, stock dividend, stock split, reverse stock split or the like, then, unless the terms of such transaction or document evidencing an Award shall provide otherwise, the Committee may make appropriate and proportionate adjustments in (i) the number and type of shares or other securities of the Company that may be acquired pursuant to Incentive Stock

Options and other Awards theretofore granted under this Plan and (ii) the maximum number and type of shares or other securities of the Company that may be issued pursuant to Incentive Stock Options and other Awards thereafter granted under this Plan.

(b) Acceleration. Each outstanding Award shall, except as otherwise provided in any applicable agreement or instrument evidencing an Award granted after the effectiveness of this Plan (as set forth in Section 9 hereof), become exercisable in full for the aggregate number of Common Shares covered thereby, or shall vest unconditionally, in the event of (i) the acquisition by any single entity or group of at least fifty percent (50%) of the outstanding voting securities of the Company or (ii) a sale of all or substantially all of the assets of the Company to another person or entity other than an affiliate of the Company, or a reorganization, merger, business combination or consolidation of the Company as a result of which in both cases at least 50% of the voting securities of the Company or its successor are held, directly or indirectly, by persons or entities who did not hold at least 50% of the voting securities of the Company immediately prior to such transaction. The Committee may also, in its discretion, accelerate the exercisability or vesting of any Award granted hereunder in accordance with the administration of this Plan. For purposes of (i) above, "group" shall have the meaning set forth in Rule 13d-5 of the Securities and Exchange Commission under the Exchange Act, and shall include as to each person, entity or group, each "affiliate" of that person, entity or group, as that term is defined in Rule 12b-2 of the Securities and Exchange Commission under the Exchange Act. The terms "person," "entity" and "group" as used in (i) above shall not include the Company or any of its subsidiaries, any employee benefit plan of the Company or any of its subsidiaries, any entity holding voting securities of the Company for or pursuant to the terms of any such plan. Securities will be deemed to constitute 50% of the voting securities of the Company or its successor if the holders thereof collectively have the power to elect at least 50% of the directors or, if the successor is not a corporation, 50% of the other analogous controlling persons. In order to permit the grantee of any Award which is outstanding upon the occurrence of any of the events referred to in (i) or (ii) above to receive the same consideration as a result of such event as would the holder of the outstanding shares of Common Stock of the Company subject to the Award, the grantee will have the right to give notice of the exercise of the option or other analogous right included in the Award in advance of the occurrence of the events described in (i) or (ii) above effective upon the occurrence of such event, and any such exercise shall be deemed effective upon the occurrence of the event and prior to any termination of the Award as a result of the event.

Section 8. AMENDMENT AND TERMINATION OF PLAN

The Board may amend or terminate this Plan at any time and in any manner, provided, however, that (a) no such amendment or termination shall deprive the recipient of any Award theretofore granted under this Plan, without the consent of such recipient, of any of his or her rights thereunder or with respect thereto; and (b) no such amendment shall increase the aggregate number of Common Shares that may be issued to all Incentive Stock Options granted under this Plan (except pursuant to Section (a) 7 hereof) or change, alter or modify the employees or class of employees eligible to receive Incentive Stock Options under this Plan without the approval of the stockholders of the Company, which approval must be obtained within 12 months after the adoption of such amendment by the Board.

Section 9. EFFECTIVENESS OF THE PLAN

This Plan shall become effective as of the date of approval by the vote of a majority of the voting securities of the Company present, either in person or by proxy, and entitled to vote at a duly constituted meeting of shareholders of the Company at which a quorum is present throughout. Prior to such approval, Awards may be granted under this Plan, provided that the exercise and/or vesting of Awards so granted shall be expressly subject to the condition that this Plan shall have been so approved. Unless this Plan shall be so approved, this Plan and all Awards theretofore made hereunder shall become null and void.

Section 10. STOCK EXCHANGE REQUIREMENTS; APPLICABLE LAWS

Notwithstanding anything to the contrary in this Plan, Common Shares purchased upon exercise of an Award, and certificates representing all or any part of such shares, shall be issued or delivered only if (a) such shares have been admitted to listing upon official notice of issuance on each stock exchange upon which shares of that class are then listed or (b) in the opinion of counsel to the Company, such issuance or delivery would not cause the Company to be in violation of or to incur liability under any Federal, state or other securities law, or any requirement of any listing agreement to which the Company is a party or any other requirement of law or of any administrative or regulatory body having jurisdiction over the Company.

Section 11. NON-EMPLOYEE DIRECTOR AWARDS

Notwithstanding anything to the contrary contained herein or in any agreement evidencing any Award hereunder, each member of the Board who is not an employee of the Company ("Non-Employee Directors") shall be eligible for Awards only issued pursuant to and in accordance with the terms of this Section 11.

(a) Eligibility. Subject to the terms and conditions of this Plan, all Non-Employee Directors of the Company shall automatically become participants in this Plan under this Section 11 upon their election as directors of the Company.

(b) Automatic Option Grants. Each person who becomes a Non-Employee Director shall automatically be awarded and issued on the date of his or her first such election and without further action of the Board, a nonqualified stock option to purchase shares of Common Stock of the Company. Such grant shall hereinafter be referred to as an "Initial Grant." If the date designated in this subsection for any Initial Grant is not a trading day of the Common Stock and the Common Stock is then traded, such Initial Grant shall be made on the first trading day which follows such designated date.

On June 1 of each year (or, in any year, if such day is not a trading day for the Common Stock and the Common Stock is then traded, the first trading day thereafter), each Non-Employee Director (other than a Non-Employee Director who received an Initial Grant within twelve months) shall be automatically awarded and issued on such date, without further action of the

Board or Committee, a nonqualified stock option to purchase 5,000 shares of Common Stock of the Company (an "Annual Grant"); provided that, in the case of a Non-Employee Director who received an Annual Grant within 12 months, the number of shares covered by such Annual Grant shall be 10,000 multiplied by a fraction, the numerator of which is the number of days elapsed from the date of such Initial Grant until the next succeeding Annual Grant, and the denominator of which is 365.

(c) Option Prices. The purchase price of the Common Stock under each option granted pursuant to this Section 11 shall be 100% of the fair value of the Common Stock on the grant date determined under Paragraph (D) of Section 3 if at that time the Common Stock is not traded and the Fair Market Value of the Common Stock on the grant date if at that time the Common Stock is traded. The "Fair Market Value" of a share of Common Stock or of a share of another class of capital stock of the Company on any day shall be equal to the last sale price, regular way, of such a share on the business day preceding such day or, in case no such sale takes place on such day and there were sales within a reasonable period before the date for which the Fair Market Value is to be determined, the mean between the lowest and highest sales prices, regular way, on the nearest date before the date as of which the Fair Market Value is to be determined, in either case as reported in the principal consolidated transaction reporting system with respect to securities listed or admitted to trading or the principal national securities exchange on which such shares are listed or admitted to trading or, if such shares are not listed or admitted to trading on any national securities exchange, the last quoted price, or if not so quoted, the average of the high bid and low asked prices in the over-the-counter market, as reported by the National Association of Securities Dealers, Inc. Automated Quotations System or such other system then in use. If none of the foregoing provisions for determining Fair Market Value are applicable, the Fair Market Value will be determined by the Board or the Committee.

(d) Term of Options. The term of each option issued to Non-Employee Directors hereunder shall be for a period of eight years from the grant date.

(i) Termination of Director Status.

(A) Death or Permanent Disability. In the event that a Non-Employee Director shall cease to be a Non-Employee Director of the Company or any of its subsidiaries (such event shall be referred to herein as a "Terminating Event") by reason of the death or Permanent Disability (as hereinafter defined) of a Non-Employee Director, then (1) the option shall terminate on the first anniversary of the date of such Terminating Event and (2) the option shall be exercisable during that one year period by the Non-Employee Director or, in the event of death or a Permanent Disability involving the appointment of a guardian, custodian or other similar personal representative, the person or persons to whom the Non-Employee Directors' rights under the option shall have passed by will or by the applicable laws of descent or distribution or as a result of any such appointment, only to the extent that it was exercisable on the date of such death or Permanent Disability. "Permanent Disability" shall mean the

inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than twelve (12) months. The Non-Employee Director shall not be deemed to have a Permanent Disability unless proof of the existence thereof shall have been furnished to the Committee in such form and manner, and at such times, as the Committee may require. Any determination by the Committee that a Non-Employee Director does or does not have a Permanent Disability and/or the date thereof shall be final and binding upon the Company and the Non-Employee Director.

(B) Other Termination. If the Terminating Event is for any reason other than those enumerated in Subparagraph 11(d)(i)(A), the option shall terminate one (1) month from the date of such Terminating Event and shall be exercisable only to the extent it was exercisable on the date of the Terminating Event.

(ii) Death Following the Terminating Event. If a Non-Employee Director shall die at any time after the occurrence of a Terminating Event and prior to the last date on which the option could have been exercised as provided above, then, to the extent that the option was exercisable on the date of such Terminating Event, the option shall terminate on the earlier of the date on which such option otherwise would expire or the first anniversary of the date of such death.

(iii) Other Terminating Events. An option granted pursuant to this Section 11 shall terminate upon the dissolution or liquidation of the Company unless the terms of the plan of dissolution or liquidation provide otherwise.

(e) Vesting of Options. Each option granted to a Non-Employee Director pursuant to this Section 11 shall become exercisable immediately on the date of the grant to the extent of 25% of the shares of Common Stock covered by such option, and shall become exercisable on each subsequent anniversary of the Grant Date to the extent of an additional 25% of the shares Common Stock covered by the Option until such option becomes fully exercisable.

(f) No Right to Continue as Director. Nothing contained in this Plan or in any agreement evidencing an Award granted hereunder to a Non-Employee Director shall confer any right to continue as a director or shall in any way affect the right and power of the stockholders of the Company to remove such participant as a member of the Board at any time, to the same extent as might have been done if this Plan had not been adopted.

(g) Limitation on Amendments. This Section 11 may not be amended more than once every six months, other than to comport with changes in the Internal Revenue Code, the Employee Retirement Income Security Act, or the rules thereunder.

NEITHER THIS AWARD NOR THE SECURITIES WHICH MAY BE ISSUED UPON THE EXERCISE HEREOF HAVE BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR ANY STATE SECURITIES LAWS AND NEITHER THIS AWARD NOR ANY INTEREST THEREIN MAY BE OFFERED, SOLD, PLEDGED, ASSIGNED OR OTHERWISE TRANSFERRED UNLESS (1) A REGISTRATION STATEMENT WITH RESPECT THERETO IS EFFECTIVE UNDER THE ACT AND ANY APPLICABLE STATE SECURITIES LAWS, OR (2) THE COMPANY RECEIVES AN OPINION OF COUNSEL TO THE HOLDER OF THIS AWARD, WHICH COUNSEL AND OPINION ARE REASONABLY SATISFACTORY TO THE COMPANY, THAT THIS AWARD AND THE SECURITIES WHICH MAY BE ISSUED UPON THE EXERCISE HEREOF MAY BE OFFERED, SOLD, PLEDGED, ASSIGNED OR TRANSFERRED IN THE MANNER CONTEMPLATED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT UNDER THE ACT OR APPLICABLE STATE SECURITIES LAWS

PHARMACEUTICAL DISCOVERY CORPORATION
1999 STOCK INCENTIVE PLAN

STOCK OPTION AWARD

This Stock Option Award ("Award") is made as of the Date of Grant indicated below by Pharmaceutical Discovery Corporation, a Delaware corporation (the "Company"), for the benefit of the person named below as Grantee.

WHEREAS, Grantee is a director, employee, consultant or adviser of the Company and/or one or more of its subsidiaries; and

WHEREAS, pursuant to the Company's 1999 Stock Incentive Plan (the "Plan"), the Board of Directors of the Company (the "Board") or the Committee thereof appointed by the Board to administer the Plan (the "Committee") has approved the grant to Grantee of an option to purchase shares of the Common Stock, par value \$.01 per share, of the Company (the "Common Stock"), on the terms and conditions set forth herein;

NOW, THEREFORE, in consideration of the foregoing recitals and the covenants set forth herein, the Company hereby agrees, and by accepting this Award the Grantee agrees, as follows:

1. Grant of Option; Certain Terms and Conditions. The Company hereby grants to Grantee, as of the Date of Grant indicated below, an option to purchase the number of shares of Common Stock indicated below (the "Option Shares") at the Exercise Price per share indicated below, which option shall expire at 5:00 o'clock p.m., East Coast time, on the Expiration Date indicated below and shall be subject to all of the terms and set forth in this Award (the "Option"). On each anniversary of the Date of Grant, the Option shall become exercisable to purchase that number of Option Shares (rounded to the nearest whole share) equal to the total number of Option Shares multiplied by the Annual Vesting Rate indicated below.

Grantee:

Date of Grant:

Number of shares purchasable: 10,000

Exercise Price per share: \$

Expiration Date:

Annual Vesting Rate: 25%

Cumulative Number of Shares -----	Applicable Date -----
2,500 Shares	April 12, 2001
2,500 Shares	April 12, 2002
2,500 Shares	April 12, 2003
2,500 Shares	April 12, 2004

The Option is intended to qualify as an incentive stock option under Section 422 of the Internal Revenue Code.

2. Termination of Option.

(a) Termination of Employment or Arrangement.

(i) Retirement. If Grantee shall cease to be a director or employee of the Company or any of its subsidiaries or shall cease to be a consultant or adviser to the Company or any of its subsidiaries, as determined by the Committee (such event shall be referred to herein as the "Termination" of Grantee's "Employment") by reason of Grantee's retirement in accordance with the Company's or any applicable employer's then-current retirement policy ("Retirement"), then (A) the Option shall terminate on the earlier of the Expiration Date or the date of such Retirement as to the number of shares for which it has not then become exercisable and (B) the Option shall terminate as to the number of shares for which it has then become exercisable upon the earlier of the Expiration Date or 30 days after the date of such Retirement. The date of Grantee's Retirement shall be the date Grantee ceases to provide services to the Company regardless of whether Grantee continues on the Company's payroll for some time thereafter; provided, however, that the Board may extend said 30 day period for a period not to exceed one year but not in any event beyond the Expiration Date.

(ii) Death or Permanent Disability. If Grantee's Employment is Terminated by reason of the death or Permanent Disability (as hereinafter defined) of Grantee, then (A) the Option shall terminate on the earlier of the Expiration Date or the date of such Termination as to the number of shares for which it has not then become exercisable and (B) the Option shall terminate as to the number of shares for which it has then become exercisable upon the earlier of the Expiration Date or the first anniversary of the date of such Termination of Employment.

"Permanent Disability" shall mean the inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months. Grantee shall not be deemed to have a Permanent Disability until proof of the existence thereof shall have been furnished to the Board in such form and manner, and at such times, as the Board may require. Any determination by the Board that Grantee does or does not have a Permanent Disability shall be final and binding upon the Company and Grantee.

(iii) Other Termination. If Grantee's Employment is Terminated for no reason, or for any reason other than Retirement, death or Permanent Disability, then (A) the Option shall terminate on the earlier of the date of the Expiration Date or the date of such Termination as to the number of shares for which it has not then become exercisable and (B) the Option shall terminate as to the number of shares for which it has then become exercisable upon the earlier of the Expiration Date or 30 days after the date of such Termination of Employment, which Termination date shall be the date Grantee ceases to provide services to the Company regardless of whether Grantee continues on the Company's payroll for some time thereafter.

(b) Death Following Certain Terminations of Employment. Notwithstanding anything to the contrary in this Award, if Grantee shall die at any time after the Termination of his or her Employment and prior to the earlier of the Expiration Date or the date the Option would terminate as to shares for which it is then exercisable pursuant to clauses (a) (i) or (iii) above, to the extent that the Option was exercisable on the date of such death the Option shall terminate on the earlier of the Expiration Date or the first anniversary of the date of such death.

(c) Other Events Causing Termination of Option. Notwithstanding anything to the contrary in this Award, the Option shall terminate upon the consummation of any of the following events:

(i) the dissolution or liquidation of the Company, or,

(ii) a reorganization, merger or consolidation of the Company as a result of which the outstanding securities of the class then subject to the Option are exchanged for or converted into cash, property and/or securities not issued by the Company unless provision is made in writing in connection with any such transaction for the assumption of the Option or the substitution for the Option of a new option covering the stock of a successor entity, or a parent or subsidiary thereof, or of the Company, with appropriate adjustments as to the number and kind of shares and price; or

(iii) a sale of substantially all of the property and assets of the Company.

3. Adjustments. In the event that the outstanding securities of the class then subject to the Option are increased, decreased or exchanged for or converted into a different number or kind of shares or securities of the Company as a result of a reorganization, merger, consolidation, recapitalization, reclassification, stock dividend, stock split, reverse stock split or the like, then, unless such event shall cause the Option to terminate pursuant to Section 2 (c) hereof or the terms of

such transaction shall provide otherwise, the Board or the Committee may make appropriate and proportionate adjustments in the number and type of shares or other securities of the Company that may thereafter be acquired upon the exercise of the Option; provided, however, that any such adjustments in the Option shall be made without changing the aggregate Exercise Price of the then unexercised portion of the Option.

4. Exercise. Unless the Option is transferred as permitted by Section 8, the Option shall be exercisable during Grantee's lifetime only by Grantee or by his or her guardian or legal representative, and after Grantee's death only by the person or entity entitled to do so under Grantee's last will and testament or applicable intestate law. If the Option is transferred as permitted by Section 8, the Option shall be exercisable by the transferee or, in the event of the transferee's death, by the person or entity entitled to do so under the transferee's last will and testament or applicable intestate law. The Option may not be exercised with respect to any fractional share; cash shall be paid in lieu of fractional shares. The Option may only be exercised by the delivery to the Company of a written notice of such exercise, which notice shall be in a form reasonably satisfactory to the Company and shall specify the number of shares to be purchased (the "Purchased Shares") and the aggregate Exercise Price for such shares (the "Exercise Notice"). By delivering the Exercise Notice, the Grantee shall be deemed to have agreed to pay or cause to be paid, and shall so pay or cause to be paid, in full such aggregate Exercise Price within five (5) business days of receipt by the Company of the Exercise Notice. Such payment shall be in cash or by wire transfer or check payable to the Company.

As promptly as practicable following the receipt of an Exercise Notice hereunder, the Company shall issue a stock certificate registered in the name of the Grantee or his or her designee, representing the number of shares issued to the Grantee upon exercise of the Option.

5. Payment of Withholding Taxes. If the Company becomes obligated to withhold an amount on account of any tax imposed as a result of the exercise of the Option, including, without limitation, any federal, state, local or other income tax, or any FICA, state disability insurance tax or other employment tax, then, by exercising the Option Grantee shall be deemed to have agreed to pay or cause to be paid, and shall pay or cause to be paid, such amount required to be withheld in cash or by wire transfer or check, concurrently with paying the cash portion of the Exercise Price or, if no portion of the Exercise Price is being paid in cash, concurrently with the delivery of the Exercise Notice to the Company.

6. Notices. All notices and other communications required or permitted to be given pursuant to this Award shall be in writing and shall be deemed given if delivered personally or five days after mailing by certified or registered mail, postage prepaid, return receipt requested, to the Company at 33 West Main Street, Elmsford, New York 10523, Attention: Corporate Secretary, or to Grantee at the residence address of Grantee set forth in the records of the Company, or at such other addresses as they may designate by written notice in the manner aforesaid.

7. Stock Exchange Requirements; Applicable Laws. Notwithstanding anything to the contrary in this Award, no shares of stock purchased upon exercise of the Option, and no certificate representing all or any part of such shares, shall be issued or delivered if (a) such shares have not

been admitted to listing upon official notice of issuance on each stock exchange upon which shares of that class are then listed or (b) in the opinion of counsel to the Company, such issuance or delivery may cause the Company to be in violation of or to incur liability under any federal, state or other securities law, or any requirement of any stock exchange listing agreement to which the Company is a party, or any other requirement of law or of any administrative or regulatory body having jurisdiction over the Company.

8. Limited Transferability. Neither the Option nor any interest therein may be sold, assigned, conveyed, gifted, pledged, hypothecated or otherwise transferred in any manner other than (i) by will or the laws of descent and distribution, (ii) by gift to a family member, (iii) by a domestic relations order to a family member in settlement of marital property rights, (iv) by transfer to an entity in which more than fifty percent of the voting interests are owned by family members (or the Grantee) in exchange for an interest in that entity or (v) by transfer to a trust for the sole benefit of the Grantee or any of the foregoing. "Family member" means any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law or sister-in-law, including adoptive relationships, any person sharing the Grantee's household (other than a tenant or employee), a trust in which these persons (or the Grantee) have more than fifty percent of the beneficial interest, a foundation in which these persons (or the Grantee) control the management of assets, and any other entity in which these persons (or the Grantee) own more than fifty percent of the voting interests. Except as set forth in (iii), (iv) or (v) above, the Option cannot be transferred for value. In the event of a transfer permitted by this Section 8 the transferee shall have all of the rights and obligations of the Grantee under this Award, but all references in Section 2 to the Termination of the Option upon the Termination of Grantee's employment, retirement, death or permanent disability shall be deemed to refer to those events as they affect Grantee and not to such events with respect to the transferee and Grantee shall continue to be responsible to the Company for all federal, state and local taxes payable as a result of the exercise of the Option. In the event of such transfer, the transferee and Grantee shall give written notice thereof to the Company, which notice shall include the name, address and social security number of the transferee.

9. Plan. The Option is granted pursuant to the Plan, as in effect on the Date of Grant, and is subject to all the terms and conditions of the Plan, as the same may be amended from time to time; provided, however, that no such amendment shall deprive Grantee, without his or her consent, of the Option or of any of Grantee's rights under this Award. The interpretation and construction by the Board or the Committee of the Plan, this Award, the Option and such rules and regulations as may be adopted by the Board or the Committee for the purpose of administering the Plan shall be final and binding upon Grantee. Until the Option shall expire, terminate or be exercised in full, the Company shall, upon written request therefor, send a copy of the Plan, in its then-current form, to Grantee or any other person or entity than entitled to exercise the Option.

10. Stockholder Rights. No person or entity shall be entitled to vote, receive dividends or be deemed for any purpose the holder of any shares until the Option shall have been duly exercised to purchase such Option Shares in accordance with the provisions of this Award.

11. Employment Rights. No provision of this Award or of the Option granted

hereunder shall (a) confer upon Grantee any right to continue in the employ of, or in its current arrangement with, the Company or any of its subsidiaries, (b) affect the right of the Company and each of its subsidiaries to terminate the employment of Grantee, or such arrangement, with or without cause, or (c) confer upon Grantee any right to participate in any employee welfare or benefit plan or other program of the Company or any of its subsidiaries other than the Plan. Grantee, if he or she is an employee of the Company or any of its subsidiaries, hereby acknowledges and agrees that the Company and each of its subsidiaries may terminate the employment of Grantee at any time and for any reason, or for no reason, unless Grantee and the Company or such subsidiary are parties to a written employment agreement that expressly provides otherwise.

12. Governing Law This Award and the Option granted hereunder shall be governed by and construed and enforced in accordance with the laws of the State of Delaware.

13. Fair Market Value. The "Fair Market Value" of a share of Common Stock or of a share of another class of capital stock of the Company on any day shall be equal to the last sale price, regular way, of such a share on the business day preceding such day or, in case no such sale takes place on such day and there were sales within a reasonable period before the date for which the Fair Market Value is to be determined, the mean between the lowest and highest sale prices, regular way, on the nearest date before the date as of which the Fair Market Value is to be determined, in either case as reported in the principal consolidated transaction reporting system with respect to securities listed or admitted to trading on the principal national securities exchange on which such shares are listed or admitted to trading or, if such shares are not listed or admitted to trading on any national securities exchange, the last quoted price, or if not so quoted, the average of the high bid and low asked prices in the over-the-counter market, as reported by the National Association of Securities Dealers, Inc. Automated Quotations System or such other system then in use. If none of the foregoing provisions for determining Fair Market Value are applicable, the Fair Market Value will be determined by the Board or the Committee.

IN WITNESS WHEREOF, the Company has fully executed this Award as of the Date of Grant.

PHARMACEUTICAL DISCOVERY CORPORATION.

By: _____
Chairman

Agreed to this ___ of _____, 200_

By: _____
"Optionee"

ALLECURE CORP.

2000 STOCK OPTION AND STOCK PLAN

1. Purposes of the Plan. The purposes of this Stock Option and Stock Plan are to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentive to Employees, Directors and Consultants and to promote the success of the Company's business. Options granted under the Plan may be Incentive Stock Options or Nonstatutory Stock Options, as determined by the Administrator at the time of grant. Stock Purchase Rights may also be granted under the Plan.

2. Definitions. As used herein, the following definitions shall apply:

(a) "Administrator" means the Board or any of its Committees as shall be administering the Plan in accordance with Section 4 hereof.

(b) "Applicable Laws" means the requirements relating to the administration of stock option plans under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any other country or jurisdiction where Options or Stock Purchase Rights are granted under the Plan.

(c) "Board" means the Board of Directors of the Company.

(d) "Code" means the Internal Revenue Code of 1986, as amended.

(e) "Committee" means a committee of Directors appointed by the Board in accordance with Section 4 hereof.

(f) "Common Stock" means the Common Stock of the Company.

(g) "Company" means AlleCure Corp., a Delaware corporation.

(h) "Consultant" means any person who is engaged by the Company or any Parent or Subsidiary to render consulting or advisory services to such entity.

(i) "Director" means a member of the Board of Directors of the Company.

(j) "Disability" means total and permanent disability as defined in Section 22(e)(3) of the Code.

(k) "Employee" means any person, including Officers and Directors, employed by the Company or any Parent or Subsidiary of the Company. A Service Provider shall not cease to be an Employee in the case of (i) any leave of absence approved by the Company or (ii) transfers between locations of the Company or between the Company, its Parent, any Subsidiary, or any successor. For purposes of Incentive Stock Options, no such leave may

exceed ninety days, unless reemployment upon expiration of such leave is guaranteed by statute or contract. If reemployment upon expiration of a leave of absence approved by the Company is not so guaranteed, on the 181st day of such leave any Incentive Stock Option held by the Optionee shall cease to be treated as an Incentive Stock Option and shall be treated for tax purposes as a Nonstatutory Stock Option. Neither service as a Director nor payment of a director's fee by the Company shall be sufficient to constitute "employment" by the Company.

(l) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(m) "Fair Market Value" means, as of any date, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the Nasdaq National Market or The Nasdaq SmallCap Market of The Nasdaq Stock Market, its Fair Market Value shall be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system for the last market trading day prior to the time of determination, as reported in The Wall Street Journal or such other source as the Administrator deems reliable;

(ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, its Fair Market Value shall be the mean between the high bid and low asked prices for the Common Stock on the last market trading day prior to the day of determination; or

(iii) In the absence of an established market for the Common Stock, the Fair Market Value thereof shall be determined in good faith by the Administrator.

(n) "Incentive Stock Option" means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code.

(o) "Nonstatutory Stock Option" means an Option not intended to qualify as an Incentive Stock Option.

(p) "Officer" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(q) "Option" means a stock option granted pursuant to the Plan.

(r) "Option Agreement" means a written or electronic agreement between the Company and an Optionee evidencing the terms and conditions of an individual Option grant. All Option Agreements shall be subject to the terms and conditions of the Plan.

(s) "Option Exchange Program" means a program whereby outstanding Options are exchanged for Options with a lower exercise price.

(t) "Optioned Stock" means the Common Stock subject to an Option or a Stock Purchase Right.

(u) "Optionee" means the holder of an outstanding Option or Stock Purchase Right granted under the Plan.

(v) "Parent" means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code.

(w) "Plan" means this 2000 Stock Option and Stock Plan.

(x) "Restricted Stock" means shares of Common Stock acquired pursuant to a grant of a Stock Purchase Right under Section 11 below.

(y) "Section 16(b)" means Section 16(b) of the Exchange Act.

(z) "Service Provider" means an Employee, Director or Consultant.

(aa) "Share" means a share of the Common Stock, as adjusted in accordance with Section 12 below.

(bb) "Stock Purchase Right" means a right to purchase Common Stock pursuant to Section 11 below.

(cc) "Subsidiary" means a "subsidiary corporation," whether now or hereafter existing, as defined in Section 424(f) of the Code.

3. Stock Subject to the Plan. Subject to the provisions of Section 12 of the Plan, the maximum aggregate number of Shares which may be subject to option and sold under the Plan is One Million (1,000,000) Shares, all of which can be granted to one or more Optionees; provided, however, that at no time shall the total number of Shares issuable upon exercise of all outstanding Options and the total number of Shares provided for under any stock bonus or similar plan of the Company exceed the applicable percentage as calculated in accordance with the conditions and exclusions set forth in Section 260.140.45 of the California Code of Regulations, based on the Shares of the Company which are outstanding at the time the calculation is made. The Shares may be authorized but unissued shares of Common Stock, or Shares that have been previously granted as Options or Stock Purchase Rights, but which have been reacquired or otherwise reverted to the Plan.

If an Option or Stock Purchase Right expires or becomes unexercisable without having been exercised in full, or is surrendered pursuant to an Option Exchange Program, the unpurchased Shares which were subject thereto shall become available for future grant or sale under the Plan (unless the Plan has terminated). However, Shares that have actually been issued under the Plan, upon exercise of either an Option or Stock Purchase Right, shall not be returned to the Plan and shall not become available for future distribution under the Plan, except that if Shares of Restricted Stock are repurchased by the Company at their original purchase price, such Shares shall become available for future grant under the Plan.

4. Administration of the Plan.

(a) Administrator. The Plan shall be administered by the Board or a Committee appointed by the Board, which Committee shall be constituted to comply with Applicable Laws.

(b) Powers of the Administrator. Subject to the provisions of the Plan and, in the case of a Committee, the specific duties delegated by the Board to such Committee, and subject to the approval of any relevant authorities, the Administrator shall have the authority in its discretion:

(i) to determine the Fair Market Value;

(ii) to select the Service Providers to whom Options and Stock Purchase Rights may from time to time be granted hereunder;

(iii) to determine the number of Shares to be covered by each such award granted hereunder;

(iv) to approve forms of agreement for use under the Plan;

(v) to determine the terms and conditions of any Option or Stock Purchase Right granted hereunder. Such terms and conditions include, but are not limited to, the exercise price, the time or times when Options or Stock Purchase Rights may be exercised (which may be based on performance criteria), any vesting acceleration or waiver of forfeiture restrictions, and any restriction or limitation regarding any Option or Stock Purchase Right or the Common Stock relating thereto, based in each case on such factors as the Administrator, in its sole discretion, shall determine;

(vi) to determine whether and under what circumstances an Option may be settled in cash under Section 9(e) instead of Common Stock;

(vii) to initiate an Option Exchange Program;

(viii) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules and regulations relating to sub-plans established for the purpose of qualifying for preferred tax treatment under foreign tax laws;

(ix) to allow Optionees to satisfy withholding tax obligations by electing to have the Company withhold from the Shares to be issued upon exercise of an Option or Stock Purchase Right that number of Shares having a Fair Market Value equal to the amount required to be withheld. The Fair Market Value of the Shares to be withheld shall be determined on the date that the amount of tax to be withheld is to be determined. All elections by Optionees to have Shares withheld for this purpose shall be made in such form and under such conditions as the Administrator may deem necessary or advisable; and

(x) to construe and interpret the terms of the Plan and awards granted pursuant to the Plan.

(c) Effect of Administrator's Decision. All decisions, determinations and interpretations of the Administrator shall be final and binding on all Optionees.

5. Eligibility.

(a) Incentive Stock Options may be granted only to Employees. Nonstatutory Stock Options and Stock Purchase Rights may be granted to any Service Provider.

(b) Each Option shall be designated in the Option Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option. However, notwithstanding such designation, to the extent that the aggregate Fair Market Value of the Shares with respect to which Incentive Stock Options are exercisable for the first time by the Optionee during any calendar year (under all plans of the Company and any Parent or Subsidiary) exceeds \$100,000, such Options shall be treated as Nonstatutory Stock Options. For purposes of this Section 5(b), Incentive Stock Options shall be taken into account in the order in which they were granted. The Fair Market Value of the Shares shall be determined as of the time the Option with respect to such Shares is granted.

(c) Neither the Plan nor any Option or Stock Purchase Right shall confer upon any Optionee any right with respect to continuing the Optionee's relationship as a Service Provider with the Company, nor shall it interfere in any way with his or her right or the Company's right to terminate such relationship at any time, with or without cause.

6. Term of Plan. The Plan shall become effective upon its adoption by the Board. It shall continue in effect for a term of 10 years, unless sooner terminated under Section 14 of the Plan.

7. Term of Option. The term of each Option shall be stated in the applicable Option Agreement; provided, however, that the term shall be no more than 10 years from the date of grant thereof. In the case of an Incentive Stock Option granted to an Optionee who, at the time the Option is granted, owns stock representing more than 10% of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the term of the Option shall be five years from the date of grant or such shorter term as may be provided in the Option Agreement.

8. Option Exercise Price and Consideration.

(a) The per share exercise price for the Shares to be issued upon exercise of an Option shall be such price as is determined by the Administrator, but shall be subject, to the following:

(i) In the case of an Incentive Stock Option

(A) granted to an Employee who, at the time of grant of such Option, owns stock representing more than 10% of the voting power of all classes of

stock of the Company or any Parent or Subsidiary, the exercise price shall be no less than 110% of the Fair Market Value per Share on the date of grant.

(B) granted to any other Employee, the per Share exercise price shall be no less than 100% of the Fair Market Value per Share on the date of grant.

(ii) In the case of a Nonstatutory Stock Option

(A) granted to a Service Provider who, at the time of grant of such Option, owns stock representing more than 10% of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the exercise price shall be no less than 110% of the Fair Market Value per Share on the date of grant.

(B) granted to any other Service Provider, the per Share exercise price shall be no less than 85% of the Fair Market Value per Share on the date of grant.

(iii) Notwithstanding the foregoing, Options may be granted with a per Share exercise price other than as required above pursuant to a merger or other corporate transaction.

(b) The consideration to be paid for the Shares to be issued upon exercise of an Option, including the method of payment, shall be determined by the Administrator (and, in the case of an Incentive Stock Option, shall be determined at the time of grant). Such consideration may consist of (1) cash, (2) check, (3) promissory note, (4) other Shares which (x) in the case of Shares acquired upon exercise of an Option, have been owned by the Optionee for more than six months on the date of surrender, and (y) have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which such Option shall be exercised, (5) consideration received by the Company under a cashless exercise program implemented by the Company in connection with the Plan, or (6) any combination of the foregoing methods of payment. In making its determination as to the type of consideration to accept, the Administrator shall consider if acceptance of such consideration may be reasonably expected to benefit the Company.

8. Exercise of Option.

(a) Procedure for Exercise; Rights as a Stockholder. Any Option granted hereunder shall be exercisable according to the terms hereof at such times and under such conditions as determined by the Administrator and set forth in the Option Agreement. Except in the case of Options granted to Officers, Directors and Consultants, Options shall become exercisable at a rate of no less than 20% per year over five years from the date the Options are granted. Unless the Administrator provides otherwise, vesting of Options granted hereunder shall be tolled during any unpaid leave of absence. An Option may not be exercised for a fraction of a Share.

An Option shall be deemed exercised when the Company receives: (i) written or electronic notice of exercise (in accordance with the Option Agreement) from the person entitled

to exercise the Option, and (ii) full payment for the Shares with respect to which the Option is exercised. Full payment may consist of any consideration and method of payment authorized by the Administrator and permitted by the Option Agreement and the Plan. Shares issued upon exercise of an Option shall be issued in the name of the Optionee or, if requested by the Optionee, in the name of the Optionee and his or her spouse. Until the Shares are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a stockholder shall exist with respect to the Shares, notwithstanding the exercise of the Option. The Company shall issue (or cause to be issued) such Shares promptly after the Option is exercised. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 12 of the Plan.

Exercise of an Option in any manner shall result in a decrease in the number of Shares thereafter available, both for purposes of the Plan and for sale under the Option, by the number of Shares as to which the Option is exercised.

(b) Termination of Relationship as a Service Provider. If an Optionee ceases to be a Service Provider, such Optionee may exercise his or her Option within such period of time as is specified in the Option Agreement (of at least 30 days) to the extent that the Option is vested on the date of termination (but in no event later than the expiration of the term of the Option as set forth in the Option Agreement). In the absence of a specified time in the Option Agreement, the Option shall remain exercisable for three months following the Optionee's termination. If, on the date of termination, the Optionee is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall revert to the Plan. If, after termination, the Optionee does not exercise his or her Option within the time specified by the Administrator, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(c) Disability of Optionee. If an Optionee ceases to be a Service Provider as a result of the Optionee's Disability, the Optionee may exercise his or her Option within such period of time as is specified in the Option Agreement (of at least six months) to the extent the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Option Agreement). In the absence of a specified time in the Option Agreement, the Option shall remain exercisable for 12 months following the Optionee's termination. If, on the date of termination, the Optionee is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall revert to the Plan. If, after termination, the Optionee does not exercise his or her Option within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(d) Death of Optionee. If an Optionee dies while a Service Provider, the Option may be exercised within such period of time as is specified in the Option Agreement (of at least six months) to the extent that the Option is vested on the date of death (but in no event later than the expiration of the term of such Option as set forth in the Option Agreement) by the Optionee's estate or by a person who acquires the right to exercise the Option by bequest or inheritance. In the absence of a specified time in the Option Agreement, the Option shall remain exercisable for 12 months following the Optionee's termination. If, at the time of death, the

Optionee is not vested as to the entire Option, the Shares covered by the unvested portion of the Option shall immediately revert to the Plan. If the Option is not so exercised within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(e) Buyout Provisions. The Administrator may at any time offer to buy out for a payment in cash or Shares, an Option previously granted, based on such terms and conditions as the Administrator shall establish and communicate to the Optionee at the time that such offer is made.

9. Non-Transferability of Options and Stock Purchase Rights. The Options and Stock Purchase Rights may not be sold, pledged, assigned, hypothecated, transferred or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised, during the lifetime of the Optionee, only by the Optionee.

10. Stock Purchase Rights.

(a) Rights to Purchase. Stock Purchase Rights may be issued either alone, in addition to, or in tandem with other awards granted under the Plan and/or cash, awards made outside of the Plan. After the Administrator determines that it will offer Stock Purchase Rights under the Plan, it shall advise the offeree in writing or electronically of the terms, conditions and restrictions related to the offer, including the number of Shares that such person shall be entitled to purchase, the price to be paid, and the time within which such person must accept such offer. The terms of the offer shall comply in all respects with Section 260.140.42 of Title 10 of the California Code of Regulations. The offer shall be accepted by execution of a Restricted Stock Purchase Agreement in the form determined by the Administrator.

(b) Repurchase Option. Unless the Administrator determines otherwise, the Restricted Stock purchase agreement shall grant the Company a repurchase option exercisable upon the voluntary or involuntary termination of the purchaser's service with the Company for any reason (including death or disability). The purchase price for Shares repurchased pursuant to the Restricted Stock purchase agreement shall be the original price paid by the purchaser and may be paid by cancellation of any indebtedness of the purchaser to the Company. The repurchase option shall lapse at such rate as the Administrator may determine. Except with respect to Shares purchased by Officers and Directors, the repurchase option shall lapse at a rate of no less than 20% per year over five years from the date of purchase.

(c) Other Provisions. The Restricted Stock purchase agreement shall contain such other terms, provisions and conditions not inconsistent with the Plan as may be determined by the Administrator in its sole discretion.

(d) Rights as a Stockholder. Once the Stock Purchase Right is exercised, the purchaser shall have rights equivalent to those of a stockholder and shall be a stockholder when his or her purchase is entered upon the records of the duly authorized transfer agent of the Company. No adjustment shall be made for a dividend or other right for which the record date is

prior to the date the Stock Purchase Right is exercised, except as provided in Section 12 of the Plan.

11. Adjustments Upon Changes in Capitalization, Merger or Asset Sale.

(a) Changes in Capitalization. Subject to any required action by the stockholders of the Company, the number of shares of Common Stock covered by each outstanding Option or Stock Purchase Right, and the number of shares of Common Stock which have been authorized for issuance under the Plan but as to which no Options or Stock Purchase Rights have yet been granted or which have been returned to the Plan upon cancellation or expiration of an Option or Stock Purchase Right, as well as the price per share of Common Stock covered by each such outstanding Option or Stock Purchase Right, shall be proportionately adjusted for any increase or decrease in the number of issued shares of Common Stock resulting from a stock split, reverse stock split, stock dividend, combination or reclassification of the Common Stock, or any other increase or decrease in the number of issued shares of Common Stock effected without receipt of consideration by the Company. The conversion of any convertible securities of the Company shall not be deemed to have been "effected without receipt of consideration." Such adjustment shall be made by the Board, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of shares of Common Stock subject to an Option or Stock Purchase Right.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, the Administrator shall notify each Optionee as soon as practicable prior to the effective date of such proposed transaction. The Administrator in its discretion may provide for an Optionee to have the right to exercise his or her Option or Stock Purchase Right until 15 days prior to such transaction as to all of the Optioned Stock covered thereby, including Shares as to which the Option or Stock Purchase Right would not otherwise be exercisable. In addition, the Administrator may provide that any Company repurchase option applicable to any Shares purchased upon exercise of an Option or Stock Purchase Right shall lapse as to all such Shares, provided the proposed dissolution or liquidation takes place at the time and in the manner contemplated. To the extent it has not been previously exercised, an Option or Stock Purchase Right will terminate immediately prior to the consummation of such proposed action.

(c) Merger or Asset Sale. In the event of a merger of the Company with or into another corporation, or the sale of substantially all of the assets of the Company, each outstanding Option and Stock Purchase Right shall be assumed or an equivalent option or right substituted by the successor corporation or a Parent or Subsidiary of the successor corporation. In the event that the successor corporation refuses to assume or substitute for the Option or Stock Purchase Right, the Optionee shall fully vest in and have the right to exercise the Option or Stock Purchase Right as to all of the Optioned Stock, including Shares as to which it would not otherwise be vested or exercisable. If an Option or Stock Purchase Right becomes fully vested and exercisable in lieu of assumption or substitution in the event of a merger or sale of assets, the Administrator shall notify the Optionee in writing or electronically that the Option or Stock Purchase Right shall be fully exercisable for a period of 15 days from the date of such notice, and

the Option or Stock Purchase Right shall terminate upon the expiration of such period. For the purposes of this paragraph, the Option or Stock Purchase Right shall be considered assumed if, following the merger or sale of assets, the option or right confers the right to purchase or receive, for each Share of Optioned Stock subject to the Option or Stock Purchase Right immediately prior to the merger or sale of assets, the consideration (whether stock, cash or other securities or property) received in the merger or sale of assets by holders of Common Stock for each Share held on the effective date of the transaction (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares); provided, however, that if such consideration received in the merger or sale of assets is not solely common stock of the successor corporation or its Parent, the Administrator may, with the consent of the successor corporation, provide for the consideration to be received upon the exercise of the Option or Stock Purchase Right, for each Share of Optioned Stock subject to the Option or Stock Purchase Right, to be solely common stock of the successor corporation or its Parent equal in fair market value to the per share consideration received by holders of Common Stock in the merger or sale of assets.

12. Time of Granting Options and Stock Purchase Rights. The date of grant of an Option or Stock Purchase Right shall, for all purposes, be the date on which the Administrator makes the determination granting such Option or Stock Purchase Right, or such other date as is determined by the Administrator. Notice of the determination shall be given to each Service Provider to whom an Option or Stock Purchase Right is so granted within a reasonable time after the date of such grant.

13. Amendment and Termination of the Plan.

(a) Amendment and Termination. The Board may at any time amend, alter, suspend or terminate the Plan.

(b) Stockholder Approval. The Board shall obtain stockholder approval of any Plan amendment to the extent necessary and desirable to comply with Applicable Laws.

(c) Effect of Amendment or Termination. No amendment, alteration, suspension or termination of the Plan shall impair the rights of any Optionee, unless mutually agreed otherwise between the Optionee and the Administrator, which agreement must be in writing and signed by the Optionee and the Company. Termination of the Plan shall not affect the Administrator's ability to exercise the powers granted to it hereunder with respect to Options granted under the Plan prior to the date of such termination.

14. Conditions Upon Issuance of Shares.

(a) Legal Compliance. Shares shall not be issued pursuant to the exercise of an Option unless the exercise of such Option and the issuance and delivery of such Shares shall comply with Applicable Laws and shall be further subject to the approval of counsel for the Company with respect to such compliance.

(b) Investment Representations. As a condition to the exercise of an Option, the Administrator may require the person exercising such Option to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required.

15. Inability to Obtain Authority. The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is deemed by the Company's counsel to be necessary to the lawful issuance and sale of any Shares hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority shall not have been obtained.

16. Reservation of Shares. The Company, during the term of this Plan, shall at all times reserve and keep available such number of Shares as shall be sufficient to satisfy the requirements of the Plan.

17. Stockholder Approval. The Plan shall be subject to approval by the stockholders of the Company within 12 months after the date the Plan is adopted. Such stockholder approval shall be obtained in the degree and manner required under Applicable Laws.

18. Information to Optionees and Purchasers. The Company shall provide to each Optionee and to each individual who acquires Shares pursuant to the Plan, not less frequently than annually during the period such Optionee or purchaser has one or more Options or Stock Purchase Rights outstanding, and, in the case of an individual who acquires Shares pursuant to the Plan, during the period such individual owns such Shares, copies of annual financial statements. The Company shall not be required to provide such statements to key employees whose duties in connection with the Company assure their access to equivalent information.

CTL IMMUNOTHERAPIES CORP.

2000 STOCK OPTION AND STOCK PLAN

1. Purposes of the Plan. The purposes of this Stock Option and Stock Plan are to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentive to Employees, Directors and Consultants and to promote the success of the Company's business. Options granted under the Plan may be Incentive Stock Options or Nonstatutory Stock Options, as determined by the Administrator at the time of grant. Stock Purchase Rights may also be granted under the Plan.

2. Definitions. As used herein, the following definitions shall apply:

(a) "Administrator" means the Board or any of its Committees as shall be administering the Plan in accordance with Section 4 hereof.

(b) "Applicable Laws" means the requirements relating to the administration of stock option plans under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any other country or jurisdiction where Options or Stock Purchase Rights are granted under the Plan.

(c) "Board" means the Board of Directors of the Company.

(d) "Code" means the Internal Revenue Code of 1986, as amended.

(e) "Committee" means a committee of Directors appointed by the Board in accordance with Section 4 hereof.

(f) "Common Stock" means the Common Stock of the Company.

(g) "Company" means CTL ImmunoTherapies Corp., a Delaware corporation.

(h) "Consultant" means any person who is engaged by the Company or any Parent or Subsidiary to render consulting or advisory services to such entity.

(i) "Director" means a member of the Board of Directors of the Company.

(j) "Disability" means total and permanent disability as defined in Section 22(e)(3) of the Code.

(k) "Employee" means any person, including Officers and Directors, employed by the Company or any Parent or Subsidiary of the Company. A Service Provider shall not cease to be an Employee in the case of (i) any leave of absence approved by the Company or (ii) transfers between locations of the Company or between the Company, its Parent, any Subsidiary, or any successor. For purposes of Incentive Stock Options, no such leave may

exceed ninety days, unless reemployment upon expiration of such leave is guaranteed by statute or contract. If reemployment upon expiration of a leave of absence approved by the Company is not so guaranteed, on the 181st day of such leave any Incentive Stock Option held by the Optionee shall cease to be treated as an Incentive Stock Option and shall be treated for tax purposes as a Nonstatutory Stock Option. Neither service as a Director nor payment of a director's fee by the Company shall be sufficient to constitute "employment" by the Company.

(1) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(m) "Fair Market Value" means, as of any date, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the Nasdaq National Market or The Nasdaq SmallCap Market of The Nasdaq Stock Market, its Fair Market Value shall be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system for the last market trading day prior to the time of determination, as reported in The Wall Street Journal or such other source as the Administrator deems reliable;

(ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, its Fair Market Value shall be the mean between the high bid and low asked prices for the Common Stock on the last market trading day prior to the day of determination; or

(iii) In the absence of an established market for the Common Stock, the Fair Market Value thereof shall be determined in good faith by the Administrator.

(n) "Incentive Stock Option" means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code.

(o) "Nonstatutory Stock Option" means an Option not intended to qualify as an Incentive Stock Option.

(p) "Officer" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(q) "Option" means a stock option granted pursuant to the Plan.

(r) "Option Agreement" means a written or electronic agreement between the Company and an Optionee evidencing the terms and conditions of an individual Option grant. All Option Agreements shall be subject to the terms and conditions of the Plan.

(s) "Option Exchange Program" means a program whereby outstanding Options are exchanged for Options with a lower exercise price.

(t) "Optioned Stock" means the Common Stock subject to an Option or a Stock Purchase Right.

(u) "Optionee" means the holder of an outstanding Option or Stock Purchase Right granted under the Plan.

(v) "Parent" means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code.

(w) "Plan" means this 2000 Stock Option and Stock Plan.

(x) "Restricted Stock" means shares of Common Stock acquired pursuant to a grant of a Stock Purchase Right under Section 11 below.

(y) "Section 16(b)" means Section 16(b) of the Exchange Act.

(z) "Service Provider" means an Employee, Director or Consultant.

(aa) "Share" means a share of the Common Stock, as adjusted in accordance with Section 12 below.

(bb) "Stock Purchase Right" means a right to purchase Common Stock pursuant to Section 11 below.

(cc) "Subsidiary" means a "subsidiary corporation," whether now or hereafter existing, as defined in Section 424(f) of the Code.

3. Stock Subject to the Plan. Subject to the provisions of Section 12 of the Plan, the maximum aggregate number of Shares which may be subject to option and sold under the Plan is 5,250,000 Shares, all of which can be granted to one or more Optionees; provided, however, that at no time shall the total number of Shares issuable upon exercise of all outstanding Options and the total number of Shares provided for under any stock bonus or similar plan of the Company exceed the applicable percentage as calculated in accordance with the conditions and exclusions set forth in Section 260.140.45 of the California Code of Regulations, based on the Shares of the Company which are outstanding at the time the calculation is made, all of which can be granted to one or more Optionees. The Shares may be authorized but unissued shares of Common Stock, or Shares that have been previously granted as Options or Stock Purchase Rights, but which have been reacquired or otherwise reverted to the Plan.

If an Option or Stock Purchase Right expires or becomes unexercisable without having been exercised in full, or is surrendered pursuant to an Option Exchange Program, the unpurchased Shares which were subject thereto shall become available for future grant or sale under the Plan (unless the Plan has terminated). However, Shares that have actually been issued under the Plan, upon exercise of either an Option or Stock Purchase Right, shall not be returned to the Plan and shall not become available for future distribution under the Plan, except that if Shares of Restricted Stock are repurchased by the Company at their original purchase price, such Shares shall become available for future grant under the Plan.

4. Administration of the Plan.

(a) Administrator. The Plan shall be administered by the Board or a Committee appointed by the Board, which Committee shall be constituted to comply with Applicable Laws.

(b) Powers of the Administrator. Subject to the provisions of the Plan and, in the case of a Committee, the specific duties delegated by the Board to such Committee, and subject to the approval of any relevant authorities, the Administrator shall have the authority in its discretion:

(i) to determine the Fair Market Value;

(ii) to select the Service Providers to whom Options and Stock Purchase Rights may from time to time be granted hereunder;

(iii) to determine the number of Shares to be covered by each such award granted hereunder;

(iv) to approve forms of agreement for use under the Plan;

(v) to determine the terms and conditions of any Option or Stock Purchase Right granted hereunder. Such terms and conditions include, but are not limited to, the exercise price, the time or times when Options or Stock Purchase Rights may be exercised (which may be based on performance criteria), any vesting acceleration or waiver of forfeiture restrictions, and any restriction or limitation regarding any Option or Stock Purchase Right or the Common Stock relating thereto, based in each case on such factors as the Administrator, in its sole discretion, shall determine;

(vi) to determine whether and under what circumstances an Option may be settled in cash under Section 9(e) instead of Common Stock;

(vii) to initiate an Option Exchange Program;

(viii) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules and regulations relating to sub-plans established for the purpose of qualifying for preferred tax treatment under foreign tax laws;

(ix) to allow Optionees to satisfy withholding tax obligations by electing to have the Company withhold from the Shares to be issued upon exercise of an Option or Stock Purchase Right that number of Shares having a Fair Market Value equal to the amount required to be withheld. The Fair Market Value of the Shares to be withheld shall be determined on the date that the amount of tax to be withheld is to be determined. All elections by Optionees to have Shares withheld for this purpose shall be made in such form and under such conditions as the Administrator may deem necessary or advisable; and

(x) to construe and interpret the terms of the Plan and awards granted pursuant to the Plan.

(c) Effect of Administrator's Decision. All decisions, determinations and interpretations of the Administrator shall be final and binding on all Optionees.

5. Eligibility.

(a) Nonstatutory Stock Options and Stock Purchase Rights may be granted to Service Providers. Incentive Stock Options may be granted only to Employees.

(b) Each Option shall be designated in the Option Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option. However, notwithstanding such designation, to the extent that the aggregate Fair Market Value of the Shares with respect to which Incentive Stock Options are exercisable for the first time by the Optionee during any calendar year (under all plans of the Company and any Parent or Subsidiary) exceeds \$100,000, such Options shall be treated as Nonstatutory Stock Options. For purposes of this Section 5(b), Incentive Stock Options shall be taken into account in the order in which they were granted. The Fair Market Value of the Shares shall be determined as of the time the Option with respect to such Shares is granted.

(c) Neither the Plan nor any Option or Stock Purchase Right shall confer upon any Optionee any right with respect to continuing the Optionee's relationship as a Service Provider with the Company, nor shall it interfere in any way with his or her right or the Company's right to terminate such relationship at any time, with or without cause.

6. Term of Plan. The Plan shall become effective upon its adoption by the Board. It shall continue in effect for a term of 10 years, unless sooner terminated under Section 14 of the Plan.

7. Term of Option. The term of each Option shall be stated in the applicable Option Agreement; provided, however, that the term shall be no more than 10 years from the date of grant thereof. In the case of an Incentive Stock Option granted to an Optionee who, at the time the Option is granted, owns stock representing more than 10% of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the term of the Option shall be five years from the date of grant or such shorter term as may be provided in the Option Agreement.

8. Option Exercise Price and Consideration.

(a) The per share exercise price for the Shares to be issued upon exercise of an Option shall be such price as is determined by the Administrator, but shall be subject to the following:

(i) In the case of an Incentive Stock Option

(A) granted to an Employee who, at the time of grant of such Option, owns stock representing more than 10% of the voting power of all classes of stock of the

Company or any Parent or Subsidiary, the exercise price shall be no less than 110% of the Fair Market Value per Share on the date of grant.

(B) granted to any other Employee, the per Share exercise price shall be no less than 100% of the Fair Market Value per Share on the date of grant.

(ii) In the case of a Nonstatutory Stock Option

(A) granted to a Service Provider who, at the time of grant of such Option, owns stock representing more than 10% of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the exercise price shall be no less than 110% of the Fair Market Value per Share on the date of grant.

(B) granted to any other Service Provider, the per Share exercise price shall be no less than 85% of the Fair Market Value per Share on the date of grant.

(iii) Notwithstanding the foregoing, Options may be granted with a per Share exercise price other than as required above pursuant to a merger or other corporate transaction.

(b) The consideration to be paid for the Shares to be issued upon exercise of an Option, including the method of payment, shall be determined by the Administrator (and, in the case of an Incentive Stock Option, shall be determined at the time of grant). Such consideration may consist of (1) cash, (2) check, (3) promissory note, (4) other Shares which (x) in the case of Shares acquired upon exercise of an Option, have been owned by the Optionee for more than six months on the date of surrender, and (y) have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which such Option shall be exercised, (5) consideration received by the Company under a cashless exercise program implemented by the Company in connection with the Plan, or (6) any combination of the foregoing methods of payment. In making its determination as to the type of consideration to accept, the Administrator shall consider if acceptance of such consideration may be reasonably expected to benefit the Company.

9. Exercise of Option.

(a) Procedure for Exercise; Rights as a Stockholder. Any Option granted hereunder shall be exercisable according to the terms hereof at such times and under such conditions as determined by the Administrator and set forth in the Option Agreement. Except in the case of Options granted to Officers, Directors and Consultants, Options shall become exercisable at a rate of no less than 20% per year over five years from the date the Options are granted. Unless the Administrator provides otherwise, vesting of Options granted hereunder shall be tolled during any unpaid leave of absence. An Option may not be exercised for a fraction of a Share.

An Option shall be deemed exercised when the Company receives: (i) written or electronic notice of exercise (in accordance with the Option Agreement) from the person entitled to exercise the Option, and (ii) full payment for the Shares with respect to which the Option is

exercised. Full payment may consist of any consideration and method of payment authorized by the Administrator and permitted by the Option Agreement and the Plan. Shares issued upon exercise of an Option shall be issued in the name of the Optionee or, if requested by the Optionee, in the name of the Optionee and his or her spouse. Until the Shares are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a stockholder shall exist with respect to the Shares, notwithstanding the exercise of the Option. The Company shall issue (or cause to be issued) such Shares promptly after the Option is exercised. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 12 of the Plan.

Exercise of an Option in any manner shall result in a decrease in the number of Shares thereafter available, both for purposes of the Plan and for sale under the Option, by the number of Shares as to which the Option is exercised.

(b) Termination of Relationship as a Service Provider. If an Optionee ceases to be a Service Provider, such Optionee may exercise his or her Option within such period of time as is specified in the Option Agreement (of at least 30 days) to the extent that the Option is vested on the date of termination (but in no event later than the expiration of the term of the Option as set forth in the Option Agreement). In the absence of a specified time in the Option Agreement, the Option shall remain exercisable for three months following the Optionee's termination. If, on the date of termination, the Optionee is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall revert to the Plan. If after termination, the Optionee does not exercise his or her Option within the time specified by the Administrator, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(c) Disability of Optionee. If an Optionee ceases to be a Service Provider as a result of the Optionee's Disability, the Optionee may exercise his or her Option within such period of time as is specified in the Option Agreement (of at least six months) to the extent the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Option Agreement). In the absence of a specified time in the Option Agreement, the Option shall remain exercisable for 12 months following the Optionee's termination. If, on the date of termination, the Optionee is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall revert to the Plan. If, after termination, the Optionee does not exercise his or her Option within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(d) Death of Optionee. If an Optionee dies while a Service Provider, the Option may be exercised within such period of time as is specified in the Option Agreement (of at least six months) to the extent that the Option is vested on the date of death (but in no event later than the expiration of the term of such Option as set forth in the Option Agreement) by the Optionee's estate or by a person who acquires the right to exercise the Option by bequest or inheritance. In the absence of a specified time in the Option Agreement, the Option shall remain exercisable for 12 months following the Optionee's termination. If, at the time of death, the Optionee is not vested as to the entire Option, the Shares covered by the unvested portion of the

Option shall immediately revert to the Plan. If the Option is not so exercised within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(e) Buyout Provisions. The Administrator may at any time offer to buy out for a payment in cash or Shares, an Option previously granted, based on such terms and conditions as the Administrator shall establish and communicate to the Optionee at the time that such offer is made.

10. Non-Transferability of Options and Stock Purchase Rights. The Options and Stock Purchase Rights may not be sold, pledged, assigned, hypothecated, transferred or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised, during the lifetime of the Optionee, only by the Optionee.

11. Stock Purchase Rights.

(a) Rights to Purchase. Stock Purchase Rights may be issued either alone, in addition to, or in tandem with other awards granted under the Plan and/or cash awards made outside of the Plan. After the Administrator determines that it will offer Stock Purchase Rights under the Plan, it shall advise the offeree in writing or electronically of the terms, conditions and restrictions related to the offer, including the number of Shares that such person shall be entitled to purchase, the price to be paid, and the time within which such person must accept such offer. The terms of the offer shall comply in all respects with Section 260.140.42 of Title 10 of the California Code of Regulations. The offer shall be accepted by execution of a Restricted Stock Purchase Agreement in the form determined by the Administrator.

(b) Repurchase Option. Unless the Administrator determines otherwise, the Restricted Stock purchase agreement shall grant the Company a repurchase option exercisable upon the voluntary or involuntary termination of the purchaser's service with the Company for any reason (including death or disability). The purchase price for Shares repurchased pursuant to the Restricted Stock purchase agreement shall be the original price paid by the purchaser and may be paid by cancellation of any indebtedness of the purchaser to the Company. The repurchase option shall lapse at such rate as the Administrator may determine. Except with respect to Shares purchased by Officers, Directors and Consultants, the repurchase option shall in no case lapse at a rate of less than 20% per year over five years from the date of purchase.

(c) Other Provisions. The Restricted Stock purchase agreement shall contain such other terms, provisions and conditions not inconsistent with the Plan as may be determined by the Administrator in its sole discretion.

(d) Rights as a Stockholder. Once the Stock Purchase Right is exercised, the purchaser shall have rights equivalent to those of a stockholder and shall be a stockholder when his or her purchase is entered upon the records of the duly authorized transfer agent of the Company. No adjustment shall be made for a dividend or other right for which the record date is prior to the date the Stock Purchase Right is exercised, except as provided in Section 12 of the Plan.

12. Adjustments Upon Changes in Capitalization. Merger or Asset

Sale.

(a) Changes in Capitalization. Subject to any required action by the stockholders of the Company, the number of shares of Common Stock covered by each outstanding Option or Stock Purchase Right, and the number of shares of Common Stock which have been authorized for issuance under the Plan but as to which no Options or Stock Purchase Rights have yet been granted or which have been returned to the Plan upon cancellation or expiration of an Option or Stock Purchase Right, as well as the price per share of Common Stock covered by each such outstanding Option or Stock Purchase Right, shall be proportionately adjusted for any increase or decrease in the number of issued shares of Common Stock resulting from a stock split, reverse stock split, stock dividend, combination or reclassification of the Common Stock, or any other increase or decrease in the number of issued shares of Common Stock effected without receipt of consideration by the Company. The conversion of any convertible securities of the Company shall not be deemed to have been "effected without receipt of consideration." Such adjustment shall be made by the Board, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of shares of Common Stock subject to an Option or Stock Purchase Right.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, the Administrator shall notify each Optionee as soon as practicable prior to the effective date of such proposed transaction. The Administrator in its discretion may provide for an Optionee to have the right to exercise his or her Option or Stock Purchase Right until 15 days prior to such transaction as to all of the Optioned Stock covered thereby, including Shares as to which the Option or Stock Purchase Right would not otherwise be exercisable. In addition, the Administrator may provide that any Company repurchase option applicable to any Shares purchased upon exercise of an Option or Stock Purchase Right shall lapse as to all such Shares, provided the proposed dissolution or liquidation takes place at the time and in the manner contemplated. To the extent it has not been previously exercised, an Option or Stock Purchase Right will terminate immediately prior to the consummation of such proposed action.

(c) Merger or Asset Sale. In the event of a merger of the Company with or into another corporation, or the sale of substantially all of the assets of the Company, each outstanding Option and Stock Purchase Right shall be assumed or an equivalent option or right substituted by the successor corporation or a Parent or Subsidiary of the successor corporation. In the event that the successor corporation refuses to assume or substitute for the Option or Stock Purchase Right, the Optionee shall fully vest in and have the right to exercise the Option or Stock Purchase Right as to all of the Optioned Stock, including Shares as to which it would not otherwise be vested or exercisable. If an Option or Stock Purchase Right becomes fully vested and exercisable in lieu of assumption or substitution in the event of a merger or sale of assets, the Administrator shall notify the Optionee in writing or electronically that the Option or Stock Purchase Right shall be fully exercisable for a period of 15 days from the date of such notice, and the Option or Stock Purchase Right shall terminate upon the expiration of such period. For the purposes of this paragraph, the Option or Stock Purchase Right shall be considered assumed if, following the merger or sale of assets, the option or right confers the right to purchase or receive,

for each Share of Optioned Stock subject to the Option or Stock Purchase Right immediately prior to the merger or sale of assets, the consideration (whether stock, cash or other securities or property) received in the merger or sale of assets by holders of Common Stock for each Share held on the effective date of the transaction (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares); provided, however, that if such consideration received in the merger or sale of assets is not solely common stock of the successor corporation or its Parent, the Administrator may, with the consent of the successor corporation, provide for the consideration to be received upon the exercise of the Option or Stock Purchase Right, for each Share of Optioned Stock subject to the Option or Stock Purchase Right, to be solely common stock of the successor corporation or its Parent equal in fair market value to the per share consideration received by holders of Common Stock in the merger or sale of assets.

13. Time of Granting Options and Stock Purchase Rights. The date of grant of an Option or Stock Purchase Right shall, for all purposes, be the date on which the Administrator makes the determination granting such Option or Stock Purchase Right, or such other date as is determined by the Administrator. Notice of the determination shall be given to each Service Provider to whom an Option or Stock Purchase Right is so granted within a reasonable time after the date of such grant.

14. Amendment and Termination of the Plan.

(a) Amendment and Termination. The Board may at any time amend, alter, suspend or terminate the Plan.

(b) Stockholder Approval. The Board shall obtain stockholder approval of any Plan amendment to the extent necessary and desirable to comply with Applicable Laws.

(c) Effect of Amendment or Termination. No amendment, alteration, suspension or termination of the Plan shall impair the rights of any Optionee, unless mutually agreed otherwise between the Optionee and the Administrator, which agreement must be in writing and signed by the Optionee and the Company. Termination of the Plan shall not affect the Administrator's ability to exercise the powers granted to it hereunder with respect to Options granted under the Plan prior to the date of such termination.

15. Conditions Upon Issuance of Shares.

(a) Legal Compliance. Shares shall not be issued pursuant to the exercise of an Option unless the exercise of such Option and the issuance and delivery of such Shares shall comply with Applicable Laws and shall be further subject to the approval of counsel for the Company with respect to such compliance.

(b) Investment Representations. As a condition to the exercise of an Option, the Administrator may require the person exercising such Option to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without

any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required.

16. Inability to Obtain Authority. The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is deemed by the Company's counsel to be necessary to the lawful issuance and sale of any Shares hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority shall not have been obtained.

17. Reservation of Shares. The Company, during the term of this Plan, shall at all times reserve and keep available such number of Shares as shall be sufficient to satisfy the requirements of the Plan.

18. Stockholder Approval. The Plan shall be subject to approval by the stockholders of the Company within 12 months after the date the Plan is adopted. Such stockholder approval shall be obtained in the degree and manner required under Applicable Laws.

19. Information to Optionees and Purchasers. The Company shall provide to each Optionee and to each individual who acquires Shares pursuant to the Plan, not less frequently than annually during the period such Optionee or purchaser has one or more Options or Stock Purchase Rights outstanding, and, in the case of an individual who acquires Shares pursuant to the Plan, during the period such individual owns such Shares, copies of annual financial statements. The Company shall not be required to provide such statements to key employees whose duties in connection with the Company assure their access to equivalent information.

MANKIND CORPORATION
2001 STOCK AWARDS PLAN

SECTION 1. PURPOSE OF PLAN

The purpose of this 2001 Stock Awards Plan ("Plan") of MannKind Corporation, a Delaware corporation (the "Company"), is to enable the Company and its affiliates to attract, retain and motivate their directors, employees and consultants by providing for or increasing the proprietary interests of such persons in the Company.

SECTION 2. PERSONS ELIGIBLE UNDER PLAN

Any person who is a director, employee or consultant of the Company or any of its affiliates (a "Grantee") shall be eligible to be considered for the grant of Awards (as hereinafter defined) hereunder; provided, however, that only those Grantees who are employees of the Company or any of its subsidiaries shall be eligible to be considered for the grant of Incentive Stock Options (as hereinafter defined) hereunder. "Affiliate" shall have the same meaning for purposes of this Plan as in Section 260.140.41 of Title 10 of the California Administrative Code but, for purposes of stock options intended to be incentive stock options granted under this Plan, "affiliate" shall include only parents and subsidiaries of the Company within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended.

SECTION 3. AWARDS

(a) The Board of Directors of the Company (the "Board") or the Committee (as hereinafter defined), on behalf of the Company, is authorized under this Plan to enter into any type of arrangement with a Grantee that is not inconsistent with the provisions of this Plan and that, by its terms, involves or might involve the issuance of (i) shares of Common Stock, par value \$.01 per share, of the Company (the "Common Shares") or (ii) a Derivative Security (as such term is defined in Rule 16a-1 promulgated under the Securities Exchange Act of 1934, as such Rule may be amended from time to time) with an exercise or conversion privilege at a price related to the Common Shares or with a value derived from the value of the Common Shares. The entering into of any such arrangement is referred to herein as the "grant" of an "Award."

(b) Awards are not restricted to any specified form or structure and may include, without limitation, sales or bonuses of stock, restricted stock, stock options, reload stock options, stock purchase warrants, other rights to acquire stock, securities convertible into or redeemable for stock, stock appreciation rights, limited stock appreciation rights, phantom stock, dividend equivalents, performance units or performance shares, and an Award may consist of one such security or benefit, or two or more of them in tandem or in the alternative.

(c) Common Shares may be issued pursuant to an Award for any lawful consideration as determined by the Committee, including, without limitation, services rendered by the recipient of such Award.

(d) Awards in the form of options shall provide for an exercise price which is not less than 85% of the fair value of the stock at the time the option is granted, except that the price shall be 110% of the fair value in the case of any person who owns stock possessing more than 10% of the total combined voting power of all classes of stock of the Company. For purposes of this Paragraph (d) the fair value of stock issuable upon exercise of an option shall be determined by the Board of Directors of the Company or Committee taking into account the following:

(i) If stock of the same class is publicly traded in an active market of substantial depth, the recent market price of such securities.

(ii) If stock of the same class has not been so publicly traded, the price at which securities of reasonably comparable corporations (if any) in the same industry are being traded, subject to appropriate adjustment for the dissimilarities between the corporations being compared.

(iii) In the absence of any reliable indicator under subparagraph (i) or (ii) above, the earnings history, book value and prospects of the Company in the light of market conditions generally.

(e) The exercise period for awards granted in the form of options shall be not more than 120 months from the date the option is granted.

(f) Awards granted in the form of options shall provide that neither the option nor any interest therein may be sold, assigned, conveyed, gifted, pledged, hypothecated or otherwise transferred in any manner other than by will or the laws of descent and distribution.

(g) Awards granted in the form of options shall be exercisable at the rate of at least 20% per year over five years from the date the option is granted subject to the conditions in (4) below. However, in the case of an option granted to officers, directors or consultants of the Company or any of its affiliates, the option may become fully exercisable subject to reasonable conditions such as continued employment, at any time or during any period established by the Company.

(h) Unless employment is terminated for cause as defined by applicable law, awards granted in the form of options shall provide that the holder of the option shall have the right to exercise in the event of termination of employment to the extent that the holder is entitled to exercise on the date employment terminates as follows:

(i) At least six months from the date of termination if termination was caused by death or disability.

(ii) At least 30 days from the date of termination if termination was caused other than by death or disability.

(i) No Awards shall be granted pursuant to this Plan if, after the granting of the Award, the number of Common Shares subject to such Award and all other Awards then outstanding under this Plan and all other stock option, stock bonus, stock purchase and other similar plans for employees, directors and/or consultants exceeds 30% of the then outstanding shares of Common Stock of all classes (determined by treating all shares of convertible preferred or convertible senior common stock as if they had been converted but not taking into account any shares subject to promotional waivers under Section 260.141 of Title 10 of the California Administrative Code), all as determined pursuant to Section 260.140.45 of Title 10 of the California Administrative Code..

(j) Subject to the other specific provisions of this Plan, the Board or the Committee, in its sole and absolute discretion, shall determine all of the terms and conditions of each Award granted under this Plan, which terms and conditions may include, among other things:

(i) a provision permitting the recipient of such Award, including any recipient who is a director or officer of the Company, to pay the purchase price of the Common Shares or other property issuable pursuant to such Award, or such recipient's tax withholding obligation with respect to such issuance, in whole or in part, by any one or more of the following:

(A) the delivery of previously owned shares of capital stock of the Company (including "pyramiding") or other property,

(B) a reduction in the amount of Common Shares or other property otherwise issuable pursuant to such Award, or

(C) the delivery of a promissory note, the terms and conditions of which shall be determined by the Committee; or

(ii) a provision required in order for such Award to qualify as an incentive stock option under Section 422 of the Internal Revenue Code (an "Incentive Stock Option").

SECTION 4. STOCK SUBJECT TO PLAN

(a) The aggregate number of Common Shares that may be issued pursuant to all Incentive Stock Options granted under this Plan shall not exceed 5,000,000. Such maximum number does not include the number of Common Shares subject to the unexercised portion of any Incentive Stock Option granted under this Plan that expires or is terminated. Such maximum number of Common Shares is subject to adjustment as provided in Section 7 hereof (and is referred to herein as the "Share Limitation").

(b) At any time, the aggregate number of Common Shares issued and issuable pursuant to all Awards (including all Incentive Stock Options) granted under this Plan shall not exceed the Share Limitation, subject to adjustment as provided in Section 7 hereof.

(c) For purposes of Section 4(b) hereof, the aggregate number of Common Shares issued and issuable pursuant to Awards granted under this Plan shall at any time be deemed to be equal to the sum of the following:

(i) the number of Common Shares which were issued prior to such time pursuant to Awards granted under this Plan excluding (except for purposes of computing the Share Limitation applicable to Incentive Stock Options granted under this Plan) shares which were reacquired by the Company pursuant to provisions in the Awards with respect to which those shares were issued giving the Company the right or obligation to reacquire such shares upon the occurrence of certain events; plus

(ii) the number of Common Shares which are or may be issuable at or after such time pursuant to outstanding Awards granted under this Plan prior to such time.

(d) The maximum number of shares as to which Awards under this Plan can be made to any employee in any calendar year under this Plan is 1,000,000.

SECTION 5. DURATION OF PLAN

No Awards shall be granted under this Plan after October 7, 2011. Although Common Shares may be issued after October 7, 2011 pursuant to Awards granted prior to such date, no Common Shares shall be issued under this Plan after October 7, 2021.

SECTION 6. ADMINISTRATION OF PLAN

(a) This Plan shall be administered by the Board or a committee thereof (the "Committee") consisting of two or more directors.

(b) Subject to the provisions of this Plan, the Board or the Committee shall be authorized and empowered to do all things necessary or desirable in connection with the administration of this Plan, including, without limitation, the following:

(i) adopt, amend and rescind rules and regulations relating to this Plan;

(ii) determine which persons meet the requirements of Section 2 hereof for eligibility under this Plan and to which of such eligible persons, if any, Awards shall be granted hereunder;

(iii) grant Awards to eligible persons and determine the terms and conditions thereof, including the number of Common Shares issuable pursuant thereto;

(iv) determine whether, and the extent to which adjustments are required pursuant to Section 7 hereof; and

(v) interpret and construe this Plan and the terms and conditions of any Award granted hereunder.

SECTION 7. ADJUSTMENTS

If the outstanding securities of the class then subject to this Plan are increased, decreased or exchanged for or converted into a different number or kind of shares or securities of the Company as a result of a reorganization, merger, consolidation, recapitalization, restructuring, combination, reclassification, stock dividend, stock split, reverse stock split or the like, then, unless the terms of such transaction or document evidencing an Award shall provide otherwise, the Committee may make appropriate and proportionate adjustments in (a) the number and type of shares or other securities of the Company that may be acquired pursuant to Incentive Stock Options and other Awards theretofore granted under this Plan and (b) the maximum number and type of shares or other securities of the Company that may be issued pursuant to Incentive Stock Options and other Awards thereafter granted under this Plan in the aggregate and/or to any employee in any calendar year..

SECTION 8. AMENDMENT AND TERMINATION OF PLAN

The Board may amend or terminate this Plan at any time and in any manner; provided, however, that (a) no such amendment or termination shall deprive the recipient of any Award theretofore granted under this Plan, without the consent of such recipient, of any of his or her rights thereunder or with respect thereto; and (b) no such amendment shall increase the aggregate number of Common Shares that may be issued pursuant to all Incentive Stock Options granted under this Plan (except pursuant to Section 7 hereof) or change, alter or modify the employees or class of employees eligible to receive Incentive Stock Options under the Plan without the approval of the stockholders of the Company, which approval must be obtained within 12 months after the adoption of such amendment by the Board.

SECTION 9. EFFECTIVE DATE OF PLAN

This Plan shall be effective as of October 8, 2001, the date upon which it was approved by the Board and the holders of a majority of Common Stock of the Company; provided, however, that no Common Shares may be issued under this Plan until it has been approved by a majority vote of the holders of the outstanding shares of Common Stock of the Company at a meeting duly held or by written consent in accordance with the laws of the State of Delaware. If an Award granted under this Plan takes the form of an option and it is exercised before stockholder approval is obtained or if stockholder approval is not obtained within 12 months before or after the date set forth above upon which this Plan was approved by the Board, then the exercise shall be rescinded. No shares subject to any such option shall be counted in determining whether such stockholder approval is obtained.

SECTION 10. STOCK EXCHANGE REQUIREMENTS; APPLICABLE LAWS

Notwithstanding anything to the contrary in this Plan, no Common Shares purchased upon exercise of an Award, and no certificate representing all or any part of such shares, shall be issued or delivered if (a) such shares have not been admitted to listing upon official notice of issuance on each stock exchange upon which shares of that class are then listed, (b) such shares have not been listed on any automated quotation system (including the Nasdaq National Market and the Nasdaq Small Cap Market) on which shares of that class are then quoted or (c) in the opinion of counsel to the Company, such issuance or delivery would cause the Company to be in violation of or to incur liability under any Federal, state or other securities law, or any requirement of any listing agreement to which the Company is a party, or any other requirement of law or of any administrative or regulatory body having jurisdiction over the Company.

SECTION 11. INFORMATION TO GRANTEES

The Company will provide to all Grantees of Awards under this Plan consolidated financial statements of the Company at least annually on or before 120 days after the end of each fiscal year of the Company.

Such financial statements shall consist of a balance sheet, income statement and statement of cash flows and shall be audited if the Company is then employing independent certified public accountants to audit its financial statements.

SECTION 12. COMPLIANCE WITH EXEMPTION REQUIREMENTS

This Plan is intended to comply with the requirements of Section 25102(o) of the California Corporate Securities Law and the regulations of the California Department of Corporations referred to therein. This Plan shall be interpreted in such a manner as to comply with these requirements. In the event this Plan omits any provision required to be included herein by those requirements, that provision is incorporated by reference herein. In the event any provision of this Plan is inconsistent with any of such requirements, that provision shall be deemed deleted from this Plan and any required provision shall be deemed added to this Plan.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

"We consent to the use in this Amendment No. 2 to Registration Statement No. 333-115020 of MannKind Corporation on Form S-1 of our report dated April 29, 2004 (, 2004 as to the fifth paragraph of Note 1), appearing in the Prospectus, which is part of this Registration Statement.

We also consent to the reference to us under the headings "Summary Financial Data," "Selected Financial Data" and "Experts" in such Prospectus.

Los Angeles, California
 , 2004"

The financial statements give effect to a one-for-three reverse split of the common stock of MannKind Corporation which will take place prior to the effective date of the registration statement of which this prospectus is a part. The preceding consent is in the form which will be furnished by Deloitte & Touche LLP, an independent registered public accounting firm, upon completion of the one-for-three reverse split of the common stock of MannKind Corporation described in the fifth paragraph of Note 1 to the financial statements and assuming that from April 29, 2004 to the date of such completion no other material events have occurred that would affect the financial statements or disclosure therein.

DELOITTE & TOUCHE LLP
Los Angeles, California
July 2, 2004

